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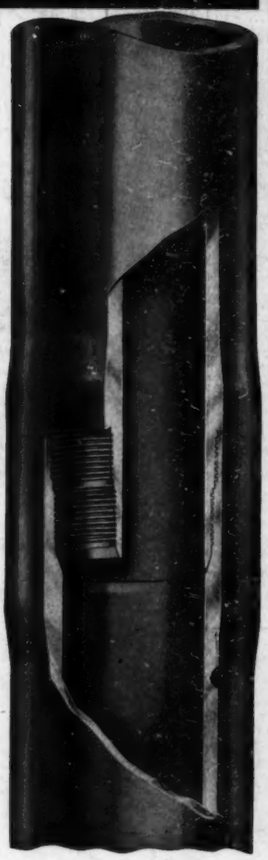

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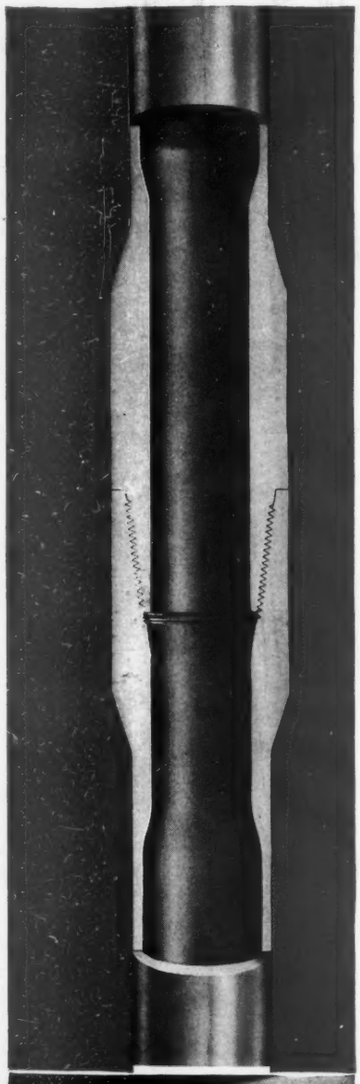

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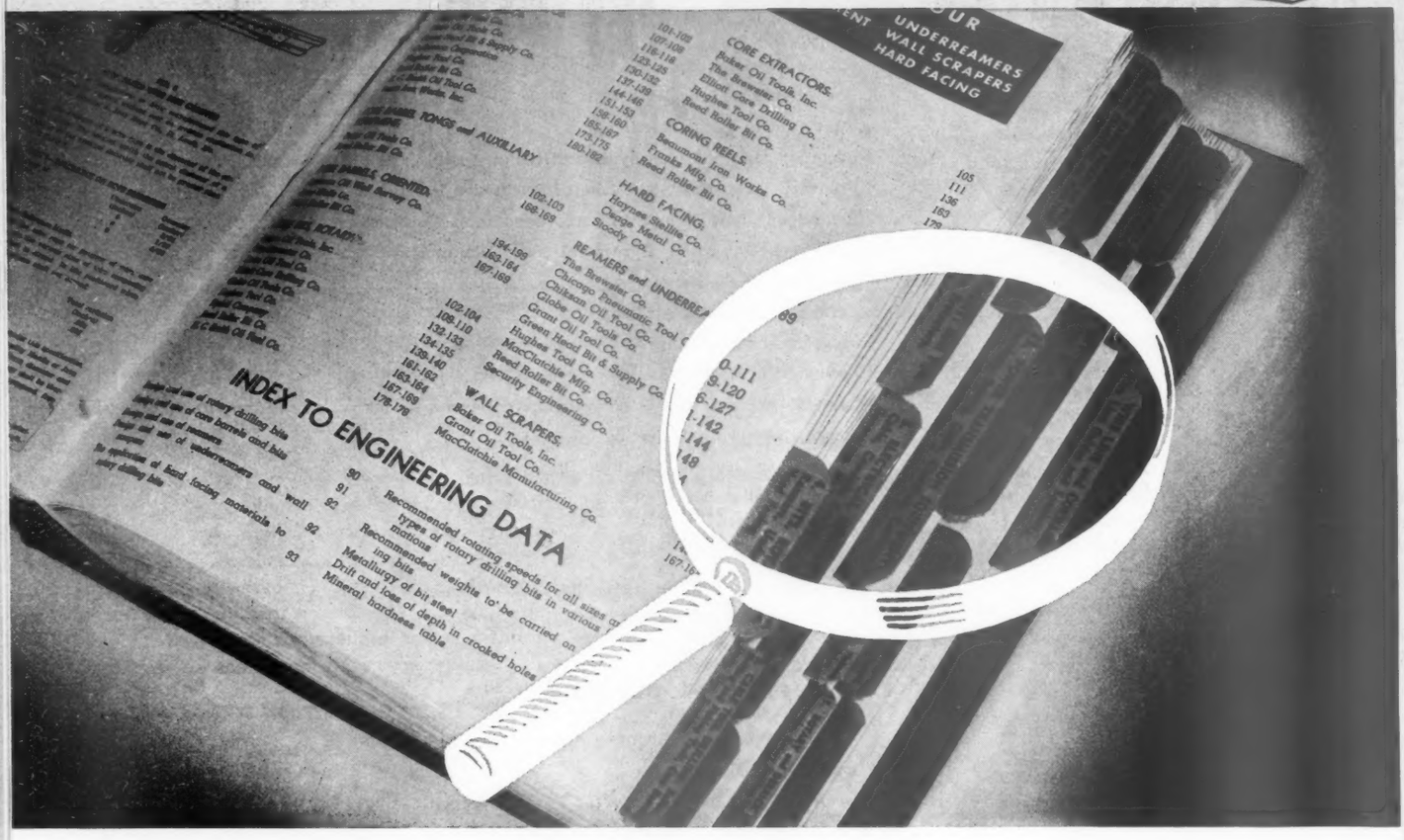

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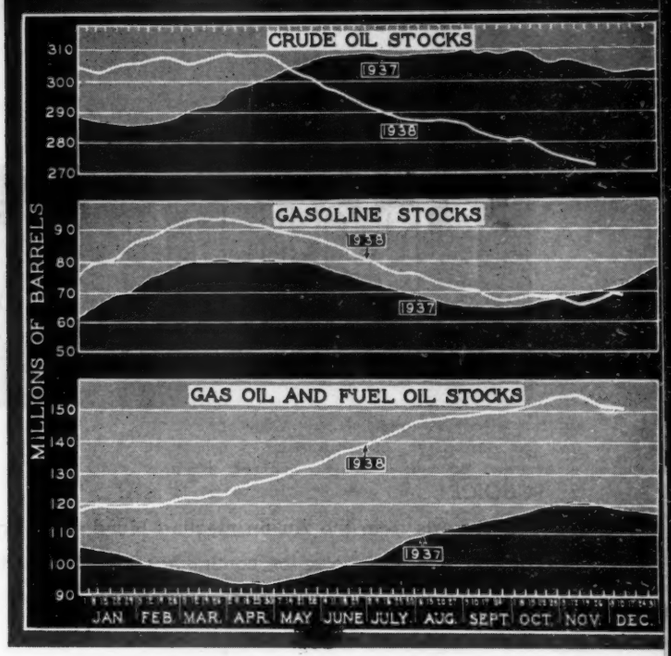
Trends

Unsettled Conditions in Crude and Refined Oils From Variety of Causes



STEADILY rising production in Illinois, which in the past 10 weeks has gone from 86,545 barrels per day to 115,877 barrels per day, exceeding all the state's past production records, is becoming a matter of alarm to many independent operators in that state who have had sad experience with overproduction in the older fields in the Mid-Continent. Strenuous efforts are being made to prevail upon all the pipe lines serving the central fields to adopt ratable taking of crude from wells on a market demand basis, in order that the posted price structure may be saved. They have already met with encouragement from among the large pipe line companies.

CRUDE PRODUCTION *3,243,083 barrels daily average—up 27,564. One year ago 3,422,208 barrels.*

CRUDE STOCKS *270,563,000 barrels as of November 26—down 1,392,000. One year ago 304,156,000 barrels.*

GASOLINE STOCKS *68,587,000 barrels as of December 10—down 568,000. One year ago 72,680,000 barrels.*

GAS AND FUEL OIL STOCKS *150,779,000 barrels as of December 10—down 838,000. One year ago 119,273,000 barrels.*

REFINERY RUNS *3,150,000 barrels daily week ending December 10—down 25,000. One year ago 3,200,000 barrels.*

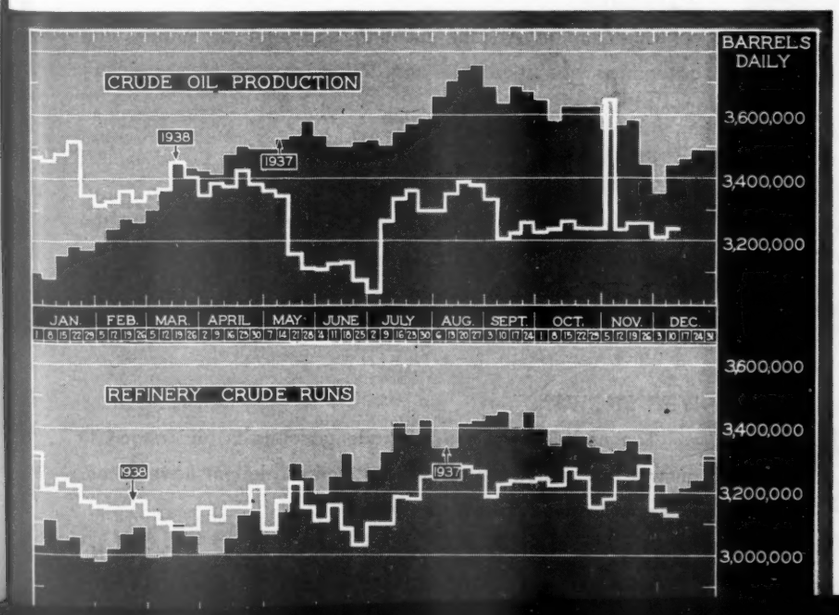
The Simrall Corporation in Michigan, effective December 13, reduced its prices in the Freeman-Redding area 5 cents per barrel, or to 82 cents, and cut West Branch and Arenac crude 4 cents, or to 70 cents per barrel. No changes were made in other Michigan fields by that company. Michigan producers have been curtailing their operations in the flush fields in fear of price reductions, and production in the state averages around the estimated demand of the Bureau of Mines, but the dreaded cut, although relatively small, came nevertheless, indicating too much production.

The 27,564-barrel increase in production in the United States in the past week may be charged principally to California and Illinois, states where there are no conservation laws that regulate oil production. The two states increased their output 29,216 barrels. Illinois has become the most actively drilling producing division in the United States, greatly exceeding any of the various Texas divisions, Oklahoma or Kansas in the number of its field operations, and in November led all divisions in the country in wells completed.

Introduction of a 67-octane third-grade gasoline by the Standard Oil Co. of Indiana unsettled the motor fuel market and focused the attention of other companies on the problem of meeting the new competition. One method contemplated is that of offering a 65-octane cracked gasoline. The significance of this movement toward higher octane ratings is far-reaching, and its possible results include virtual disappearance of the familiar skimming plant in flush oil fields. Heavy withdrawals are being made from the huge accumulations of residual fuels, and if industrial activity continues to rise it is believed the oppressive stocks which have constituted a serious problem will be reduced to an economic level before the middle of 1939. Natural gasoline, maintaining its belated rise, went to a new high for the year. Field stocks have been exhausted and the larger manufacturers have turned buyers. Unseasonably mild warm weather still makes it difficult to keep heating oils moving from interior refineries, but on the northern Atlantic Coast these products are strong.

DAILY AVERAGE PRODUCTION FOR WEEK

	Dec. 10, 1938	Bur. Mines Dec. est. of demand	Dec. state allowables	Dec. 3, 1938
Oklahoma City	91,800	.....	.....	77,550
Fitts	32,450	.....	.....	35,800
Remainder of state	301,625	.....	.....	304,200
Total Oklahoma	425,875	500,700	428,000	417,550
East Texas	371,396	.....	.....	371,135
West Texas	199,347	.....	.....	205,917
North Central Texas	104,048	.....	.....	104,174
Texas Panhandle	66,900	.....	.....	62,346
East Central Texas	88,550	.....	.....	90,925
Gulf Coast Texas	337,550	.....	.....	336,930
Southwest Texas	100,898	.....	.....	101,275
Total Texas	1,268,689	1,343,900	1,294,577	1,272,702
North Louisiana	75,990	.....	.....	72,560
Gulf Coast Louisiana	183,100	.....	.....	188,365
Total Louisiana	259,090	248,000	247,580	260,925
California	663,100	589,700	610,000	641,750
Kansas	147,800	159,000	163,400	148,240
Arkansas	49,630	51,600	52,000	48,600
Eastern Fields	91,750	97,100	.....	91,700
Illinois	115,877	71,900	.....	108,011
Michigan	51,882	51,000	.....	50,671
New Mexico	98,150	100,300	98,285	106,410
Rocky Mountain area	71,240	92,600	.....	68,960
Total United States	3,243,083	3,305,800	.....	3,215,519



SPARKS FROM THE NEWS

CHOICE

Reports from the Austin meeting Monday indicate Texas operators have choice of continuing Saturday and Sunday shutdowns or forcing additional crude on market at lower prices.

GOOD RECORD

Latest government reports covering 10 months show domestic gasoline consumption, 99.5 per cent of 1937 peak with 26 per cent increase in exports.

RELIEF

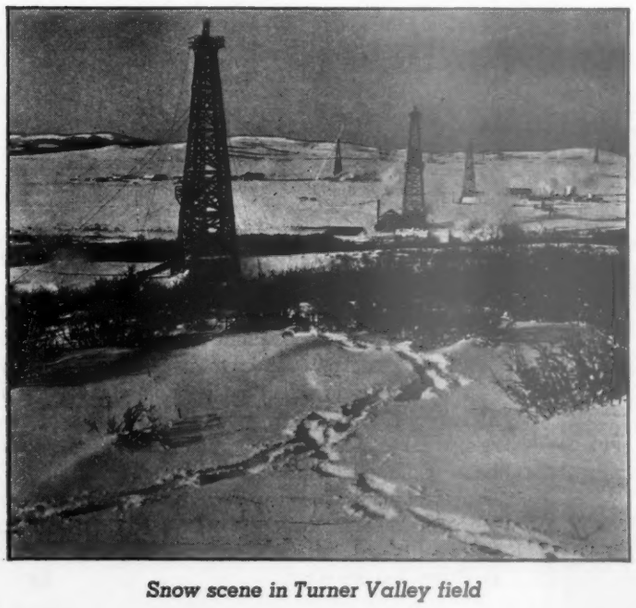
Substitution of purchases for withdrawals from storage is relieving the anxiety of producers in some areas.

THE END

Changes in licensing arrangements which will permit the ethylizing of third-grade gasolines probably mean the demise of low-octane motor fuels in retail sales for all time.

DIFFERENCE

Iowa and Missouri farmers in the Forest City basin play are more receptive to lease operators than to government representatives seeking to tell them how to farm their lands.



Snow scene in Turner Valley field

AHEAD OF SCHEDULE

The 100,000-barrel daily production in the new Illinois fields has arrived three months ahead of last summer's predictions. They are now conjecturing regarding 150,000 barrels daily.

MAJOR FIELD

The Rodessa pool is headed for the 100,000,000-barrel class with accumulated production passing 80,000,000 barrels last week.

RENAMED

After listening to all those Ph.D.'s with their curves and charts and pointers, some of those attending the O'Mahoney "monopoly committee" hearings think it should be called the "monotony" committee.

FLYING FREIGHT

The Barco development in Colombia indicates time is not far distant when freight as well as passengers in the oil industry will travel by air.

FAMILIAR TERMS

The familiar Wilcox sand and the Hunton lime were responsible for two new discoveries in Oklahoma during the past week.

AGREEMENT

Speakers at Abilene meeting had their differences but agreement was unanimous that federal control of oil industry should not be expanded.

MOST IMPORTANT

The most important news of the week and possibly the year furthering conservation and stabilization was the indication that U. S. Supreme Court will uphold Oklahoma's well spacing statute.

WHO KNOWS?

The new 67-octane third-grade gasoline is understood to answer a question which refiners and marketers have faced. It seems to have asked some too.

War of Octanes May Be Near

By T. F. SMILEY

There will be no hurry about following the lead of the Standard Oil Co. of Indiana in the introduction of a 67-octane third-grade gasoline, executives of competing companies said this week.

At the same time they indicated that, with a few scattered exceptions, refining and marketing companies would find it necessary to pursue Indiana's course or some modification of it. An opinion expressed was that adoption of the new fuel eventually would become nation-wide, but that the first in line probably would be companies that have retail outlets in Indiana's territory.

"We shall feel our way," commented one sales manager. "This thing of bringing third-grade gasoline up to 67-octane rating is going to involve tremendous expense. It will add a half-cent to the cost of every gallon. In the case of gasolines that do not react readily to lead it will add even more. We mean to look before we leap. We're going to study all sides of the question, particularly the matter of cost, before we act."

Among ways of meeting the competition presented by the new fuel, one under consideration is that of selling an unleaded 65-octane gasoline. This method will be available for refiners having cracking facilities.

Spirited and Worried Discussion

Indiana's announcement, which took most of the industry by surprise, has caused spirited and somewhat worried discussion. Speculation as to the precise reasons for the revolutionary step and as to its probable effects, not only on the market, but on the fortunes of some refining organizations, covers a wide range. The company's statement concerning its plan sheds no light on such questions. It reads:

"Standard Oil Co. of Indiana announces that the octane rating of its third-brand gasoline, Stanolind, will be increased to 67 by the L-3 method as soon as the necessary arrangements can be carried out. It is intended to make the improved product available as quickly as possible throughout the entire Middle West, commencing with those states where distribution may be readily accomplished, which are Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Kansas, Missouri and South Dakota. This will result in North Dakota, Oklahoma, Colorado, Wyoming and Montana being taken care of somewhat later. The improved product will be available for distribution both through dealers and to consumers."

Supplies of the new fuel were moved to bulk stations in some parts of Indiana's territory last week, and on Saturday agents and salesmen received a communication from the company advising them that wherever these supplies were in hand the material could be sold to the retail trade. The communication made no mention of any change in price, leaving it to be assumed that the new green-dyed motor fuel will be sold at the same price received for "Stanolind," the company's old third-grade motor fuel.

Licenses issued by the Ethyl Gasoline Corp. to refiners permitted the latter to use lead in their premium grade of motor fuel and in the next highest, or regular, grade only. Following the decision of the Standard of Indiana to put a 67-octane third-grade gasoline on the market the Ethyl Gasoline Corp. wired to all its licensees a cancellation of that clause of the contract, thus permitting them to use lead in any grade.

Far-reaching changes are seen as a probable outcome of this latest move in the direction of higher octane ratings. One of the first questions that comes to mind is what effect it will have on sales of regular house-brand motor fuel. Will the regular grade retain its present octane rating of 70-72, or will it go to a higher number? What will happen to refiners who find themselves unable to meet the cost of the new fuel?

Those who predict a general rise in octane ratings, with the probable retention of a premium grade, point to the fact that each year's new automobiles are engineered to yield their best performance on motor fuel of higher antiknock value than those of the year before and that refiners have kept abreast of these changes by providing the quality of gasoline needed.

Market observers express the view that for an indefinite length of time there will continue to be a substantial demand for the old low-octane gasoline and that the newcomer will be simply an added member of the family—and for a time a rather troublesome one perhaps.

It is pointed out that immense quantities of low-octane gasoline are consumed in agricultural areas in the operation of stoves and lamps, not to mention automobiles and tractors. Leaded gasoline cannot be used for light and heat. It is predicted that many farmers who can get along satisfactorily with one grade of gasoline will continue to do that instead of buying two grades.

It remains to be seen how the motorist will react to the opportunity of getting for the present price of third-grade material a gasoline which has an octane rating only slightly below that of the regular grade and which he may find will operate his car just about as efficiently, especially if it is not one of the latest models.

It looks as though small refiners with substantial commercial accounts, such as truck lines, taxicab companies, and other owners of fleets, may suffer reduction of their business as a result of the appearance of the improved third-grade fuel. Refiners without cracking facilities face a particularly perplexing problem.

The trend toward higher-octane motor fuels promises increased business for natural gasoline manufacturers, since the naturals are high in antiknock value and refiners will use heavier blends with their straightrun material. Only in exceptional instances do naturals run as low as 70 in their octane number. The natural gasoline from most fields rarely falls below 74. In some it is higher. That from the Monument field of New Mexico has an octane rating of 84.5.

Adding 15 Octanes

The significant character of the step taken by Indiana is realized more clearly when it is considered that ordinary third-grade gasoline usually has an octane rating of 50-52. A few specially high antiknock crudes, like that from East Texas, runs a little higher. The refiner in all but a few exceptional cases must add 15 to the octane number of his third-grade gasoline in order to bring it up to the requirements of the new standard set by Indiana. The cost of doing this is likely to be prohibitive for many refiners.

Regardless of difficulties that may lie in the

Questions

Action of the Standard of Indiana in announcing a 67-octane third-grade gasoline and that of the Ethyl Gasoline Corp. in permitting third grades to be ethylized have caused speculation regarding probable developments in an already highly competitive motor fuel market. Refiners and marketers are asking:

Will motorists shift from the present regular grades to the third grades because they are unable to detect any difference in performance of gasolines varying three to five points in octane rating?

Is this the forerunner of an increase in octane ratings of the regular and premium grades?

Does it mean the end of the third-grade gasoline ranging from 40 to 60 octane or will the trade recognize a fourth grade covering these specifications?

What will happen to the small refiner without cracking facilities whose chief business is supplying large consumers with third-grade gasoline?

Will there be a place for skimming plants in flush oil fields of the future?

path of the new fuel, there is a pretty general feeling that its appearance is in keeping with a trend already well defined and that it is the forerunner of a lifting of octane ratings along the whole front. For the time being it looks as though some refiners, already operating at a loss, will have to give away something more if they add the 67-octane material to their output. It has to be assumed that sooner or later needed adjustments in the price structure will be made, reimbursing the refiner for the increased costs of manufacture.

Reports are received that some motor fuels now produced in the East and sold as regular house-brand material, with a nominal octane rating of 70-72, are entitled as a matter of fact to a rating nearer 74. Companies with a nation-wide market make it a practice to standardize their products, and they are not likely to distribute regularly a higher-octane gasoline in one part of the country than in another.

Even in areas where the octane does not seem so important as it does in the cold and hilly country of New England, refiners meet their octane-bracket specifications generously. This was evidenced in a recent distillation test of gasoline samples of six leading refiners obtained at filling stations in a city of the southwest. They showed octane ratings of 71.8, 71.4, 71.3, 71, 71.4, 70.8. They are indicative of a disposition to keep fairly near the ceiling of octane specifications, rather than barely to avoid touching bottom.

Some in the trade assert that the movement toward higher octanes, now gaining fresh momentum, foreshadows the end of the skimming-plant era, which has seen hurriedly constructed refineries spring up in all flush oil fields. Supporting this view is the fact that in the total gasoline produced in recent time the proportion of straightrun has been declining steadily, representing 44 per cent in 1937, while the proportion of cracked material has risen, reaching 47 per cent last year.

The comparatively recent introduction of polymerization affords further evidence of the resistless trend toward higher octanes. But all methods of elevating the octane rating—including reforming, blending, and of course leading—have suddenly become subjects of heightened interest. And a new phase of the octane race is on.

Texas Legislators Attend Oil Meeting at Abilene

By D. H. STORMONT

ABILENE, Tex., Dec. 12.—Strong opposition to any control of the oil industry by federal bodies was voiced by speakers at the annual meeting of the West Central Texas Oil and Gas Association held here Saturday. Although addresses chiefly dealt with problems now confronting the industry, both local and national, practically every speaker expressed his opinion on this subject. A record attendance of over 600 oil producers and company officials heard the addresses, and in addition some 50 members of the legislature and other state officials came to get acquainted with the problems and views of the oil industry.

Chief speakers were Col. E. O. Thompson, chairman of the Texas Railroad Commission; W. R. Boyd, executive vice president of the American Petroleum Institute; Russell B. Brown, general counsel for the Independent Petroleum Association of America; and Harold B. Fell, executive vice president of the I.P.A.A.

Chairman Thompson said regulation of the oil industry by the federal Government would be unfeasible and unconstitutional, stating "the production of oil is not commerce, and if it is not commerce, it could not be called interstate commerce. Therefore, the federal Government has no right to regulate the production of oil."

Five basic regulations he said would be necessary to enforce a general proration policy so as to eliminate disturbances now within the industry. These were: to determine the most effective rate of flow for each field, to take bottom-hole pressures and limit the rate of flow to preserve the reservoir energy, to restrain overdrilling, to use market demand as a guide to how much oil is to be allocated to each field, and to fix a definite field allocation. He criticized selective buying as being against proration and the common purchaser law of Texas, and classed it with threats against East Texas proration as two of the industry's present problems. In regard to the latter he said:

"Our engineers have been working on this case and they have calculated on the theory presented by the protestants that the production in East Texas would be at the rate of 2,600,000 bbls. a day. If the field were produced at this rate, within one month pressures would drop to 740 pounds and would be insufficient to lift the oil to the surface. On the other hand, if the field is produced at the rate of 432,000 bbls. a day and all water is returned to the reservoir as we plan, pressure would be 1,096 pounds in June, 1943, and there would have been produced and saved 1,500,000,000 bbls. of reserve. If the rate of 2,600,000 bbls. daily should be forced upon us by court order, pressures would be exhausted with only .06 of the reserve produced."

In the early part of his address at the morning meeting, W. R. Boyd defended the A.P.I. from the criticism that it is a tool of the major oil companies, and therefore a tool of monopoly. Low price of gasoline, low profits and high wages were cited as being reasons why the industry could not be in the control of a few companies. He mentioned the aid given to the industry by the A.P.I. but added that the antitrust laws tended to curb the activities of the association. Competitive conditions were the cause for present market conditions, was his belief.

Then, speaking as "Bill Boyd" and not as executive vice president of the A.P.I., he came out strongly for state rights and argued against federal regimentation of oil and other products. He did not believe the federal government, under the constitution, had the authority to regulate oil production or set up state allocations without the consent of the state.

Russell B. Brown, I.P.A. general counsel, at the afternoon meeting said two of the most serious problems confronting the industry are pipe line proration and unrestricted operation of large eastern refineries. Regarding the latter he said, "Despite the fact that crude stocks are being reduced, some eastern seaboard refiners are creating huge stocks of gasoline and then dumping the gasoline on the market."

This practice, he said, tended to lower the price of refinery gasoline which in turn affected the crude price structure. Under this system, he said, the price of crude was being based on that of gasoline instead of on actual production costs. Continuance of such practices would lead only to additional crude price cuts and would eventually end in breaking down the entire conservation program.

The harmful effects of pipe line proration were that it tended to cause producers to find an outlet for their crude, selling under posted price if necessary. Such local conditions if continued, tended to affect the whole industry as the interests of the various producing sections of the country are much more closely interrelated than they were several years ago. The effect of new discoveries in Illinois on the national price structure was an example.

Following Mr. Brown's address, Harold B. Fell emphasized the importance of local, state and national associations of oil producers and the need for sound oil conservation programs. Such programs, he said should provide for recovery of the greatest amount of crude at the lowest cost, eliminate aboveground waste of crude, limit stocks of both crude and refined products, restrict production by proration and allow no pool to produce more oil than can be produced without waste. It should act to produce the most oil at the least cost over the longest period of time. Production should be kept always within market demand, he felt, and the fact that demand could be forecast was brought out by showing the Bureau of Mine's estimated demand figures were less than 1 per cent off from actual demand during last year and the 11 months of this year. Legal restriction should be placed on imports since they supply about 4½ per cent of the total market demand.

Limitations on stripper areas, special allowables for pools and unratable taking of oil by pipe lines were criticized as not conducive to the best interests of conservation and proration. Every field should receive its proportional share of the total market demand, and each producer in the field should do likewise. Unless cooperation of oil men is had to prevent abuses in the industry and to assure prorata production of oil in the various states, federal assistance (not control) will be necessary, he said.

Both Railroad Commissioner Lon A. Smith and Commissioner-elect G. A. Sadler addressed the meeting, inviting the oil men to bring their problems and data to the statewide hearing in January and they would be discussed regardless of the time required. Commissioner Smith, long opposed to Saturday and Sunday shutdowns, stated that while he might differ with his associates on proration, there was no one more in favor of conservation than he: "That it is better to let the oil stay underground than to bring it out until demand is sufficient to utilize it." Mr. Sadler stated he intended to let the testimony heard at the January hearing determine whether he would vote for the two-day shutdown and that "the commission will be the 'three-man board' it is intended by law to be."

Speakers at the wild-game banquet Saturday night, served to more than 1,600 guests, were Lieut. Governor-elect Coke R. Stevenson and J. C. Hunter, retiring president of the association, Gerald C. Mann, attorney general-elect, spoke at the luncheon.

A. J. Frazier of Ungren & Frazier, Abilene, was elected president of the association for the coming year; C. K. West, Breckenridge, was named first vice president; Charles J. Kleiner, of Cisco, second vice president; Bailey Lewis of Abilene, treasurer; and J. C. Watson was elevated to executive secretary.

New directors are O. B. Stephens, Dale H. Horn and Tom F. Grisham, Abilene; John Hope, Anson; W. C. Russell, Hamlin; James H. Beall, Jr., Sweetwater; G. D. Chastain, Ranger; Guy Patterson, Rotan; Merrick Davis, Albany; R. C. McCarter, Rising Star; L. C. Harper, Bryson; E. R. Marchman, R. N. Williams, Jr., Graham; F. W. Peckham, Stamford, and R. E. Kirkpatrick.

Lieut. Gov. Stelle of Illinois Talks Against Oil Proration

CENTRALIA, Ill., Dec. 10.—A public meeting called by the Illinois Independent Oil Operators and Royalty Owners Association was held here Friday evening. The principal address was made by Lieut. Gov. John Stelle, who spoke against proration of Illinois oil fields as a policy that would retard the best interests of Illinois and its people. He said he would be in the front rank of a movement to place a tax on oil and gas imported into Illinois from other states if companies seeking proration insist upon carrying forward "their discriminatory policies against oil produced in Illinois."

Facts and Advice Given by Executives at Austin

By D. H. STORMONT

AUSTIN, Tex., Dec. 12.—Only slight differences in opinions of what constituted adequate or minimum working stocks of crude at this time, and what would be an economic figure for gasoline stocks next March 31 were heard at the statewide hearing by the Railroad Commission held here today. The consensus was that gasoline stocks should be no higher than 80,000,000 to 82,000,000 bbls. at that time, and that crude inventories were now approaching an economic level with absolute minimum working stocks placed between 230,000,000 and 250,000,000 bbls.

The majority of those testifying felt also that production should be continued at its present

W. S. S. RODGERS

level, using two-day shutdowns as a curb if necessary; that top allowables should be placed on all fields to discourage drilling of excessive wells; and that crude runs to stills should be held low between now and March 31 in order that the industry might go into the heavy consumption period of 1939 in healthy condition.

An outstanding feature of the hearing was the attention given to refinery operations. Executives representing some of the largest refining organizations in the United States appeared at the hearing and answered questions presented by Colonel E. O. Thompson, chairman of the Texas Railroad Commission, covering their own plant operations and also gave their views regarding the needed level of operations for 1939. It is thought this will prove to be an important development in bringing about the cooperation of refiners in maintaining their operations in line with consumptive needs. Failure to do this is held largely responsible for the decline in refinery prices over the past year which was finally reflected in lower price schedules for crude oil.

Harry C. Wiess, president of Humble Oil & Refining Co., said its crude stocks of 12,795,599 bbls. on November 1 were 1,250,000 bbls. above desirable levels. About 1,000,000 bbls. would be drawn from storage from now until March. Gasoline stocks have been reduced 310,000 bbls. from October and 551,000 bbls. from a year ago to 2,136,700 bbls., which will be about the March 31 condition.

Because of the favorable outlook, it might be possible for the company to continue taking all West Texas crude for a time, he said.

E. J. Henry, vice president of Atlantic Refining Co., reported gasoline stocks of 1,650,000 bbls. on November 19, compared to 1,380,000 bbls. a year ago, and crude stocks of 4,885,000 bbls., compared to 7,766,000 bbls. a year ago. Crude stocks were approximately right with no withdrawals until March 31. Gasoline stocks March 31 should be 82,000,000 bbls.

Economic Level

T. E. Swigart, vice president, Shell Petroleum Corp., considers the company's crude stocks of 5,995,000 bbls., compared to 9,070,000 bbls. a year ago, at a desirable level. About 6,000 bbls. daily will be added to storage in the next three months. He thought 80,000,000 bbls. of gasoline desirable on March 31. The economic level of crude storage he put at 240,000,000 bbls., but he did not favor a reduction of stocks now; production should be held to current level.

A. J. McIntosh, economics department of Socony-Vacuum, said the company had surplus crude of 7,500,000 bbls., including 7,000,000 bbls. of its subsidiary, Magnolia, which would be worked off at a reduction of 900,000 bbls. annually. The company's gasoline inventory would be 7,900,000 bbls. March 31, compared to 8,819,000 bbls. a year ago. He believed 81,000,000 bbls. the economic level of gasoline stocks March 31. Crude stocks could go as low as 224,900,000 bbls., he thought, but might be cut to 250,000,000 bbls.

Neither crude nor gasoline stocks are too high, Dan Moran, president of Continental Oil Co., said. The company's crude inventories of 9,000,000 bbls. "will not hurt us." Things are not as bad as they seem and, "generally speaking, I do not think there is anything wrong." The company was trying to increase its takings in K.M.A. to 100 per cent.

W. S. S. Rodgers, president of Texas Corp., suggested a forecast of the commission's policy on the number of shutdowns four to six months in the future as a means of relieving some of the uncertainty hanging over the market. If production was too slow, "you can always change if you run behind." Without shutdowns in 1939, he predicted production would exceed demand.

Texas crude stocks are about 6,000,000 bbls. in excess of needs, Mr. Rodgers said, but the company will "freeze" it to aid the general situation. The company is estimating a 4 per cent consumption rise next year but operating on 3 per cent to be safe. Gasoline stocks of 5,898,983 bbls. on October 1 were about 100,000 bbls. more than now and about 75,000 bbls. less than a year ago. He set 79,290,000 bbls. as the theoretical desirable figure for total gasoline stocks March 31. Crude stocks are 30,000,000 bbls. too high, and should be reduced gradually, to a balance in 1940.

The company would be glad to advocate Saturday-Sunday shutdowns in other states, he said,

H. C. WIESS

citing curtailment of takings in Louisiana.

Sinclair Refining Co. has a 27-day supply of gasoline and is figuring on no increase in consumption to offset a 13 per cent oversupply last year. Vice President George H. Taber, Jr., figured 79,000,000 bbls. as desirable gasoline storage March 31. He suggested Sinclair would swap K.M.A. connections for East Texas oil and purchase 100 per cent.

George A. Hill, president of Houston Oil Co., thought crude storage ought to be reduced about 12,000,000 bbls. and set March 31 gasoline storage at 82,000,000 bbls.

J. Edgar Pew, vice president of Sun Oil Co., said his company's 45-day supply of 5,687,000 bbls. of crude was "about as close as we can run," with

(Continued on Page 30)

Texas Co. safety-first crews in the Salem field hold a get-together

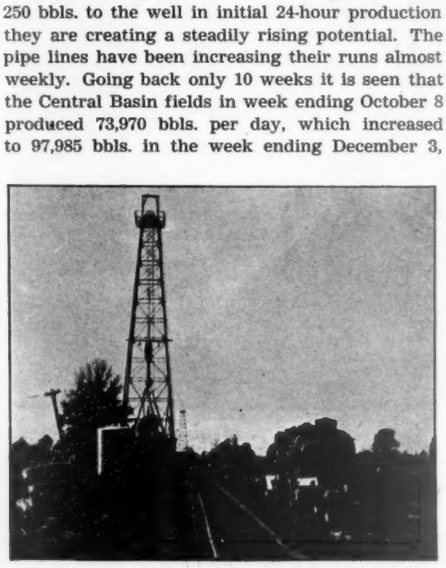
Producers Fret in Production

By JAMES McINTYRE

Long before the Central Illinois fields were discovered, or even thought of excepting in a vague way, too much crude oil was available in the United States for the consuming public to use in the form of refined products. Curtailment of production had been in force for from 7 to 10 years either by pipe lines or by orders of legally constituted state commissions. On top of the general oversupply of crude came the discovery of oil in the Illinois Central Basin, first in Clinton County in the Bartelso field in 1936, then in Marion County in the Patoka field in 1937. These were followed by discoveries in Clinton, Marion, Clay, Wayne, Richland, Fayette, and Jefferson counties, which steadily built up a production to practically 105,000 bbls. in daily output, even with the wells prorated to a part of their potential production.

Purchasers' Problem

There are enough pipe lines into the Central Basin fields to take care of more oil than is being produced, but the crude oil purchasers are confronted with the same difficulty that purchasers are in other states—the lack of a sufficient market. To add to the troubles Illinois producers are completing an average of 70 new oil wells weekly, and as these wells yield around 250 bbls. to the well in initial 24-hour production they are creating a steadily rising potential. The pipe lines have been increasing their runs almost weekly. Going back only 10 weeks it is seen that the Central Basin fields in week ending October 8 produced 73,970 bbls. per day, which increased to 97,985 bbls. in the week ending December 3,



Blackstock had to crowd the M. & I. Railroad tracks to start developments on the right of way

and to 104,887 bbls. in the past week. The whole state increased in production from the first week in October to the first week in December from 86,545 bbls. per day to 108,011 bbls. per day, breaking all Illinois records for daily production, following this with a total production of 115,877 bbls. per day last week.

The following table shows at a glance the daily production for the 10 weeks and the number of new oil wells brought into production weekly:

Week ending—	Av. daily prod., new fields	Av. daily prod., old fields	Av. daily prod., all fields	New oil wells comp.
October 8	73,970	12,575	86,545	57
October 15	76,389	11,126	87,515	52
October 22	76,282	10,923	87,205	79
October 29	75,980	13,450	89,430	69
November 5	88,089	10,971	99,060	78
November 12 ...	75,128	11,476	86,605	79
November 19 ...	76,487	10,263	86,752	78
November 26 ...	89,260	12,987	102,247	84
December 3	97,985	10,026	108,011	80
December 10 ...	104,887	10,990	115,877	66

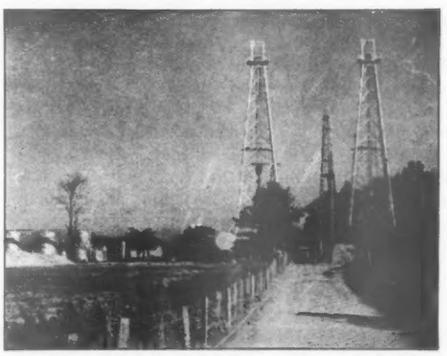
The increases from 76,000 to 89,000 bbls. in one week, and then a further increase to practically 98,000 bbls. in the new fields forced the Sohio Corp. on December 4 to lower its runs per well from 25 bbls. to 20 bbls. in Centralia; from 50 bbls. to 30 bbls. in Salem; from 35 bbls. to 30 bbls. in Dix; from 40 bbls. to 30 bbls. in Louden, and from 75 bbls. to 40 bbls. in the deep basin fields of Ina, Clay City, Noble, Olney, Flora, Fairfield, and Burnt Prairie, in Clay, Richland, and Wayne counties.

From the week ending October 8 to the week ending December 3, 650 oil wells were added to the 1,262 oil wells already in the Central Basin. The 1,262 wells were producing 75,000 bbls. per day at the end of September. To this the 650 new wells added a total initial production of 162,500 bbls., on the most conservative estimate, which, while it was scattered over the 63-day period in which the 650 wells were completed, and allowing for a natural decline from initial to semi-settled output, piled up a potential far higher than the 98,000 bbls. per day the basin fields actually produced in the week ending December 3.

Independent producers, in the basin fields have become alarmed over the excessive and steadily rising production. They know that for some time past considerable oil has been going out of the fields at 70 to 75 cents per barrel while the posted price of the large purchasers is $1.15, and they fear a break in the market if this increases. Many of the independents have operated, and some of them yet operate, in one or more of the states of Kansas, Oklahoma, Texas, Arkansas, and Louisiana, and have had costly experience with overproduction and bootlegged oil. These men are working for ratable taking of crude on a market-demand basis with the posted price remaining where it is, and they are also discouraging the exploration of the deep McClosky lime and Devonian lime horizons in the fields where the Benoist sand produces. They want to exhaust the possibilities of Benoist before deeper horizons are explored and exploited.

In the matter of ratable taking the Sohio corporation, the Oklahoma Pipe Line (Carter Oil Co.) and the Central States Pipe Line (Texas Co.), have been prorating and running oil ratably ever since the Marion and Fayette County fields began to assume serious proportions. The Texas Co., in a statement by H. N. Pardee, general superintendent, placed the company on record on Thursday, December 8, as follows:

"Effective at once and until further notice, the Texas Co. will produce its wells from the Benoist sand in what is known as the Lake Centralia-



In this narrow lane every well calls for two close up offsets

Salem area of Marion County, Illinois, at a rate which it believes to represent good producing practice and which will result in the greatest ultimate recovery of oil per acre.

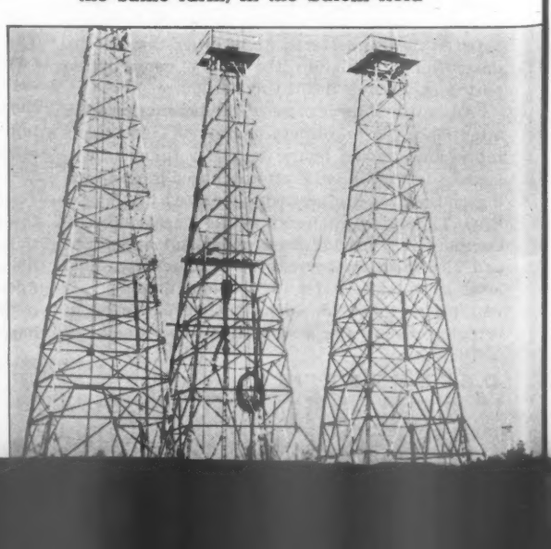
"At the present time, the Texas Co. believes this rate should not be in excess of 50 bbls. per well per day.

"Exceptions to this producing policy, until further notice, will only occur where the Texas Co. is forced to produce its wells at a greater rate per day because the wells of others which are direct or diagonal offsets are being produced at a greater rate and it therefore becomes necessary for the Texas Co. to do likewise in order to protect itself and its lessors from drainage."

Principal Shippers

The Sohio corporation (formerly the Owensboro corporation) is a crude oil buyer for the Standard Oil Co. of Ohio. It has no production of its own. It is paying $1.15 per barrel for the oil it runs from wells in the basin fields. The Texas Co. has a line from the Salem field to its refinery in Lawrenceville, Ill., and is running about 18,-

Center well was drilled on a strip on the Kalkbrenner farm. The two Texas Co. offsets are on the same farm, in the Salem field



Over Swift Rise of Illinois Oil

A part of Lake Centralia, showing Roberts Brothers No. 1 Pittenger

000 bbls. a day, mostly from its own wells in the Salem area, but buying some oil at the regular posted price and willing to purchase more. The Pure Oil Co. pipe line takes care of Pure's own production in the McClosky lime fields in the deep part of the basin. The Carter Oil Co., through its pipe line out of the Louden field in Fayette County, is handling Carter's production and while it is in the market for crude of other Louden producers it must be on the same prorated basis to which the Carter Oil Co. subjects itself. Magnolia Petroleum Co. has a line that extends from the Salem field in Marion County to a junction with the Illinois Pipe Line Co. which takes Magnolia's oil to Wood River, where it again enters a Magnolia pipe line recently acquired and is shipped to the Socony-Vacuum refinery at East St. Louis. Magnolia is not yet a crude purchaser, but takes care of its own large production in Salem, and may extend its pipe line from Salem south to Mount Vernon, a distance of about 30 miles where it recently opened a pool.

The Sohio, Carter, and Texas companies prorate all the wells to which their pipe lines are connected. Texas Co. prorates its own wells in Salem where it is by far the leading producer, and Carter takes only a part of the potential from its wells in Louden, where it is the largest producer.

The most active fields in Illinois, Louden in Fayette County, and Salem in Marion County, are defined on all sides, but contain a large undeveloped acreage within the limits of the two fields.

Louden and Salem Defined

The Louden field in Townships 7n-3e and 8n-3e, is about 10 miles long and an average of about 2½ miles wide, or the equivalent of 16,000 acres. The Carter Oil Co. owns about 85 per cent of the that part of the proven field in the northern township (8n-3e), and about 75 per cent of the acreage in the south end of the field. It has been developing its leases wherever possible on the basis of one well to 20 acres and on such a pattern still has hundreds of locations to be drilled. Not all of the operators in the Louden area are spacing their wells as conservatively as the Carter and some small tracts are being closely drilled. However, of the 135 current operations in Louden the Carter Oil Co. has over 80. The company has not drilled a dry hole in the present proven area.

The Texas Co. is the largest lease owner in the Salem field which has a proven acreage 6 miles long and an average of 2½ miles wide, or about 9,600 acres. The Texas Co. has nearly 150 operations under way in Illinois but about 135 of these are located in the Salem field. Its other operations are in the Olney field in Richland County and the Fairfield district in Wayne County and the Louden field in Fayette County.

The Salem field has more church lots, school lots, lanes and oddly shaped plats of fractional acreage than any field in Illinois and strange to say these appear to have been overlooked by the big companies but were seized upon by individuals who at once began developing their properties. Where they found production it became necessary for the adjoining lease owners to offset them on all sides so it is not an uncommon sight to see three to five derricks so close together that one can almost step from one to the other.

The Texas Co. recently purchased a tract of land in Section 5-2n-2e, 2 miles west of Salem, and will build a two-story office building, a large warehouse, and a dozen cottage-type dwelling houses on the property. The office building will have 12 rooms and will house the producing department of the Texas Co. and officials and clerical force of the Central States Pipe Line Co. The Baltimore & Ohio Railroad will build a spur about 550 feet long on the property to facilitate the delivery of field and pipe line material. Many of the Texas Co. employes in the field reside in Salem.

Magnolia Petroleum Co. had built a field office and is building a camp which will include a dozen or so five-room bungalows at Selmaville in the Salem field.

The Gulf Oil Corp. has increased its already large acreage in Illinois, Indiana, and Kentucky by the purchase of approximately 150,000 acres of undeveloped leases in the three states from the Nollem Oil & Gas Corp. The leases lie in 20 southern Illinois counties, 8 Indiana counties, and 10 Kentucky counties. The Nollem Oil & Gas Co. has been leasing in the basin area of the three states for the past three years and has production in Jefferson County, Illinois; Perry County, Indiana, and Ohio County, western Kentucky, and a part ownership in production in McLean and Hancock counties in western Kentucky. The company will retain and develop its productive acreage.

Mid-Continent oil field workers will recognize old friends in this group of Texas Co. operatives in the Salem field

Official Names of Pools

The Illinois nomenclature committee, appointed to straighten out the confusion in names used for the newly discovered fields in the Illinois basin, has decided on the following classifications:

Salem pool, Marion County, opened by the Texas Co. No. 1 Tate in Section 5-1n-2e.

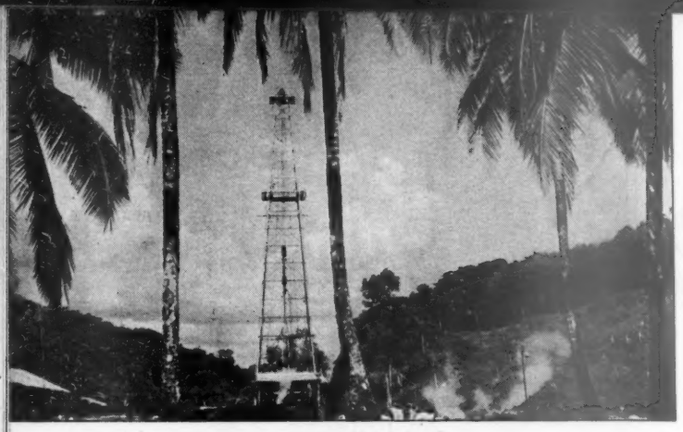
Louden pool, Fayette County, discovered by the Carter Oil Co. No. 1 Mary Miller, in Section 12-8n-3e.

Centralia pool, Clinton and Marion counties, discovered by Adams Oil & Gas Co. in Section 2-1n-1w.

Aden pool, Wayne County, discovered by the Texas Co. No. 1 Silverman, Section 16-3s-7e.

North Aden, Wayne County, opened by H. H. Weinert No. 1 Twist, Section 33-2s-7e. South Noble, Richland County, SW quarter Township 3n-9e. Olney field, Richland County, SE quarter Township 4n-10e. Schnell pool, Richland County, Section 7-2n-9e. Flora pool, Clay County, Township 3n-6e. St. James pool, Fayette County, Township 6n-3e. South Russellville, Lawrence County, new gas field in Township 4n-11w, second principal meridian. The nomenclature committee is composed of Dr. A. H. Bell of the Illinois Geological Survey; John Asbury, Illinois Scouts Association, and B. M. Miller, Illinois Geological Society.

New 90- by 170-foot hanger type sectional transportation-division unit introduced into new southern Illinois oil fields by Pure Oil Co. at Olney



Drilling well in the Rio de Oro field of Colombian Petroleum Co., Barco concession

Remarkable S
in Barco C

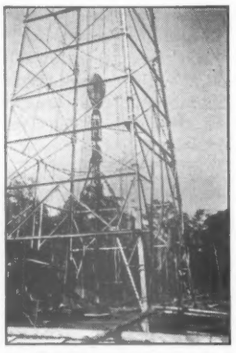
By C. O. WILLSON

PETROLEA CAMP, Barco Concession, Colombia.—This concession and area are the center of the most active and spectacular development in the oil industry outside the United States at this time.

Several thousand men are engaged in enlarging the production of the concession and building a 260-mile pipe line to a terminal on the Caribbean Sea, a combination project which in many respects dwarfs every other development seen by the writer on this trip. When completed, the Barco concession, known to many principally as a promotion project, will undoubtedly take a place among the important oil-producing areas. There is the possibility it will be the opening wedge that will bring about other important discoveries in this east central part of Colombia, a country whose present marketed production is confined to the De Mares concession of the Tropical Oil Co. located to the south and west in the Magdalena Valley.

After a visit to the producing activities in this Petrolea area and some of the construction points on the pipe line it would be easy to write at length concerning the difficulties and hazards. It happens, however, that those in charge are saying little about their troubles or their accomplishments.

"Wait until we are on production" summarizes their viewpoint. The managements of the Colombian Petroleum Co., the producing unit, and the South American Gulf Oil Co., owner of the pipe line, knew they had taken over a major job when they acquired the property in May, 1936. While certain phases of the pipe-line work have been more difficult than expected, no unsurmountable tasks have been encountered. It is anticipated that most of the more difficult phases of the work will be completed within another three months, with pipe-line deliveries in prospect during the last half of next year.



Drilling well in Petrolea

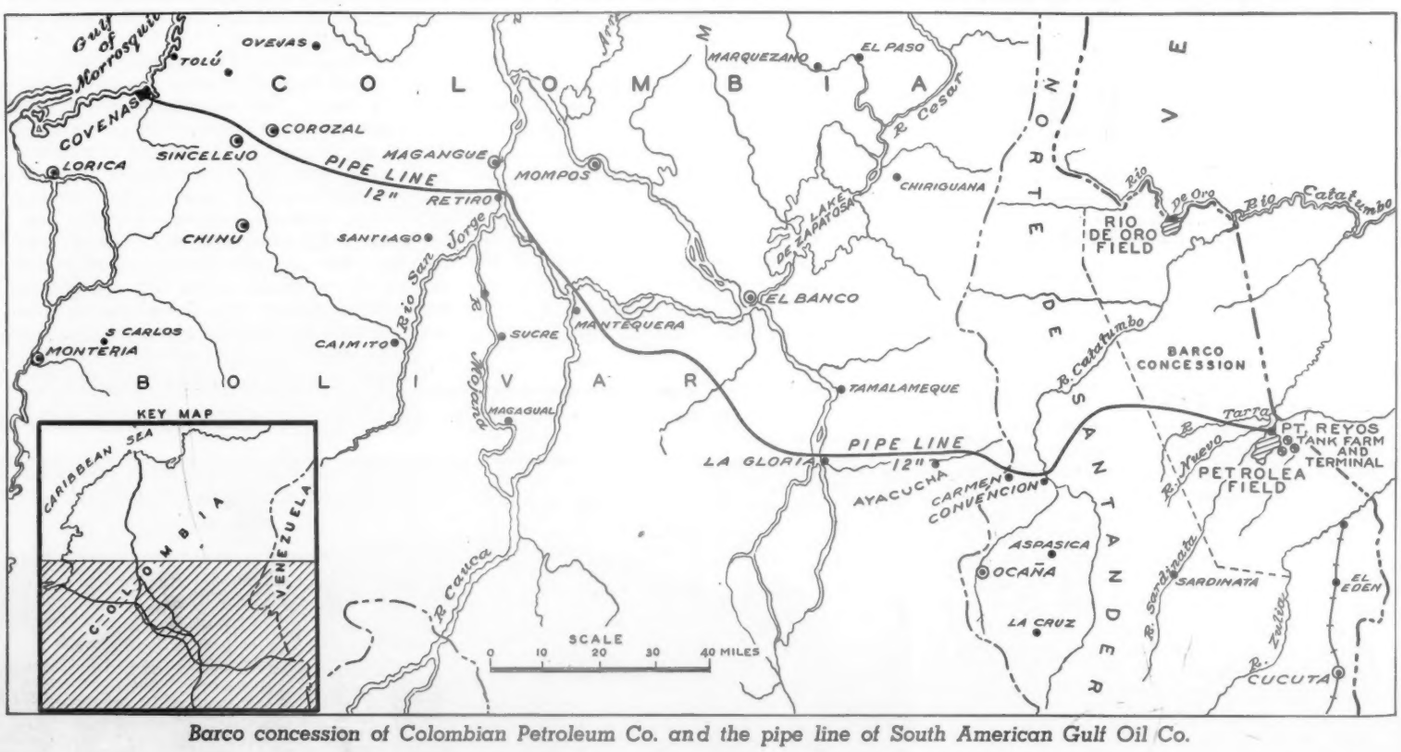
The exact completion date is largely dependent on weather conditions, which have been mainly responsible for any delays that have materialized up to this time.

The reader will obtain some idea of this pipe-line project if he can visualize the laying of a line across 260 miles of terrain which varies from high mountain ranges to low swampy lands, the entire area covered for the most part with heavy forests and tropical vegetation. A wide roadway has to be cut through a large part of the pipe-line right of way. Existing transportation facilities are largely confined to streams, and many of these are navigable only during the rainy season.

Part of the area through which the right of way passes had never previously been penetrated by the Colombians who live in this section. Due to this fact, no trails were available to move supplies and equipment. Over a part of this area it has been necessary to move in these materials and provisions by a fleet of large airplanes which operate out of Barranquilla, Cucuta, and points on the Magdalena River.

The equipment that has been moved by air established a record in the oil industry. It includes trucks, tractors and other heavy equipment used in the construction of the roads. For example, all the steel and materials for the construction of a suspension bridge at a remote point are to be moved in by air. It is estimated it will require approximately 150 trips.

One important part of this air transportation is the movement of foodstuffs. The immediate territory offers little in the way of regular food supplies, and the bulk of the provisions has to be brought in from outside points, using every transportation facility available. At points remote from the rivers and where roadways have not been completed, these



Barco concession of Colombian Petroleum Co. and the pipe line of South American Gulf Oil Co.

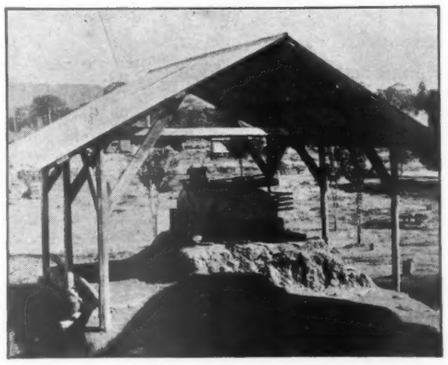
Developments in Barco Concession

Transporting oil-field boiler to location on narrow gauge railroad in Barco concession

supplies for the camps are flown in by air. Cases are cited in which it was necessary to fly in provisions for mules used in road construction. These operations, of course, will be unnecessary when the road system is completed.

Before passing to some of the details of the present producing and pipe-line construction operations, readers who have not kept in touch with the Barco operations of the last quarter century may be interested in a short history of the events which have brought developments to their present status.

The late General Virgilio Barco, prominent and wealthy Colombian, was the first owner of the concession, which is approximately 75 miles long and 25 miles wide. The 1,200,000 acres within the concession form an area which is 50 per cent larger than the State of Rhode Island. Barco was attracted



The original Barco still in Petrolea field, Barco concession, built by General Virgilio Barco, operated with crude from seepages

to the area by oil and gas seepages at several points. These seepages continue to the present time. One large seepage is within a few feet of the hospital located at this camp. On the other side of the hospital is a gas seepage which has been tapped, furnishing a fuel supply for the hospital, the dining hall and the laboratory.

General Barco built the small shell still shown in the accompanying picture which has been preserved by the present owners. Oil from the seepages in this immediate area was refined in this still and the products sold locally. Barco is said to have tired of the unprofitable operation, due in part to the attitude of the Motilones Indians, who burned his refinery and buildings.

In 1919 Henry L. Doherty (Cities Service) acquired control of the concession with the Carib Syndicate holding a minor interest. Doherty drilled a shallow test in the Rio de Oro district in the north part of the concession that year and secured showing of low-gravity crude. This test has produced small quantities of this heavy oil in recent years.

Doherty did not follow up this development, and in 1926 the Gulf Oil Corp. acquired his interest. The concession was immediately canceled by the Colombian Government, and it was not until 1931, after prolonged negotiations, that the government granted the company another concession covering the same area. The company started preparations for development immediately, and in 1933 the first well, known as Petrolea No. 1, blew in from a depth of approximately 500 feet. The well caught fire and the area was brought to the attention of the industry generally when the Kinley brothers flew their fire-fighting equipment from the States to the well and were successful in putting out the fire.

The Gulf company, operating under the name of the Colombian Petroleum Co., carried on a slow development of the Petrolea area and completed several wells in the Petrolea section. The company also drilled two wells in the Rio de Oro field, in the northern part of the concession, and completed a small producer. The company succeeded in overcoming many of the operating difficulties which are inherent in this territory and established a permanent camp with transportation facilities to several points.

In May, 1936, the Texas Co. and the Socony-Vacuum Oil Co. purchased the property from the Gulf company. Last year the two companies also purchased the 21 per cent interest of the Carib Syndicate. It is said the two transactions involved payments of approximately $7,500,000.

The operation under these two companies started where the Gulf company left off, with the new management largely in the hands of representatives of the Texas Co. transferred here from the United States.

The Barco heirs have a small royalty interest in the actual production in addition to that of the Colombian Government.

It was announced last year in connection with new financing by the Texas and Socony-Vacuum companies that a 12-inch pipe line would be built connecting the concession to the port of Covenas, in the Gulf of Cispata, shown on the accompanying map. This port is about 80 miles south of Cartagena, near which is the terminal for the 356-mile pipe line of the Andian National Corp., Ltd., which is the only other pipe line in Colombia. This pipe line furnishes an outlet for the producing properties of the Tropical Oil Co., an affiliated concern.

General headquarters for the South American Gulf Oil Co., which is building the pipe line and will operate it when completed, are located at Barranquilla, with the main field office near Petrolea at the terminal's tank farm. Field headquarters for the Colombian Petroleum Co. are at Cucuta, one of the important cities of eastern Colombia, 45 miles south of here. General headquarters for both companies are in New York City.

The Colombian company is expanding its operations as rapidly as possible, both in this area and in the north part of the concession, where the Rio de Oro field is located. The immediate objective is to develop sufficient crude petroleum to feed the pipe line when it is completed. The initial requirements probably will be around 50,000 bbls. daily, although the line will have a much larger capacity than that in the transportation of light-gravity crude oil. In addition the company is carrying on active exploratory work through wildcat tests and geological surveys in other parts of the concession. While construction plans have not been announced, the company, in compliance with the terms of the concession, will also build a refinery which will refine part of the crude made available by the pipe line.

Multi-Faulted Anticline

Production in this area comes from a multiple-faulted anticline. A majority of the 30 completed wells are producing from siltstone and limestone of the Cogollo formation, ranging from 450 to 650 feet in depth. Other production in the area ranges down 1,500 feet. These wells are widely scattered and indicate a producing area of several thousand acres at the shallow depths. Five tests are now drilling, including one deep wildcat test.

The crude is unusual in that it averages around 45° A.P.I. gravity. It is greenish oil with reddish tinge which yields up to 50 per cent gasoline by atmospheric distillation.

While high gas pressures are occasionally encountered, there are no special drilling problems at the shallow depths. Diesel engines are used for power in all drilling operations at this time.

Due to lack of outlets, no prolonged tests have been made of the completed wells, which generally show initial production ranging from a few hundred to 3,000 bbls. daily.

Four tests have been completed as producing wells in the Rio de Oro field on the Rio de Oro. The producing depths range from 1,200 to 1,500 feet. The production is coming from the sandstone of the Catatumbo formation. This field will not be connected immediately to the pipe line now under construction. The crude in this field has the same general properties as the Petrolea field, but its gravity is lower, ranging from 37° to 40° A.P.I.

(Continued on Page 32)

Camp and tank farm of South American Gulf Oil Co. in Petrolea—first station on pipe line

Salt Creek Field Unitization Agreement Near Adoption

CASPER, Wyo., Dec. 12.—An agreement for the unitization of the Salt Creek field is now being submitted to all owners of leases, working interests and royalties in the field for their signatures. The plan was adopted after an extensive study of all factors entering into such an agreement by a group of well-known engineers. While royalty owners are invited to sign, their failure to do so will not invalidate the plan. All interests in the field will have a leeway of six months from the date the agreement goes into effect in which to make a final decision before being barred. It is hoped to put the agreement into effect by January 1, 1939. The plan has been fully considered by the Department of the Interior officials to whom it goes for the final signature of Secretary Ickes after the holders of interest have agreed to the plan.

The unitized area embraces the entire field and all producing sands. However, participating areas are to be formed for the different sands which are to include those interests affected by the several areas. The second Wall Creek is the principal producing sand and owners of wells or leases within the unitized area and within the area of that horizon are to be brought under a participating agreement. A similar arrangement will be made for those owning interests in other areas such as the Tensleep.

Under the agreement all owners of government leases will have their leases extended for the life of the field. Others will be subject to periodical renewals as at present. Stanolind Oil & Gas Co., in effect, will be the operator for the field. Sinclair-Wyoming Oil Co., which has a production of only 300 bbls. per day, is the only operator which so far has not agreed to sign. Wyoming has no law authorizing the placing of state land under a unit agreement, but it is expected legislation will be enacted before the six months limit expires permitting state land to be placed under the agreement.

No large investment will be necessary in inaugurating the agreement. However, if an ample supply becomes available an expenditure of $5,000,000 or more may be made in the future for piping gas to the field and equipping it for repressuring on a more extensive scale than at present. The field has produced approximately 250,000,000 bbls. of oil. The engineers estimate this represents a recovery of approximately 20 per cent. If over a period of several years the gas pressure can be increased to 500 to 700 pounds, it is estimated another 20 per cent, or 250,000,000 bbls. may be recovered, especially if the pressure then be raised up to 1,000 pounds.

I.P.A.A. Committee of 36 Is Considering Reports

FORT WORTH, Tex., Dec. 13.—Two subcommittees of the Independent Petroleum Association of America Committee of 36 met here Monday to prepare a report on special questions to the main committee in executive session today.

Each committee is composed of seven members. One considered the proposal of naming an umpire to make allocations that would be enforceable between oil-producing states, allocations to refiners and amending the Connally Act to provide allocations to states.

The second committee has been studying the question of refinery regulation through the Interstate Oil Compact Commission.

A third subcommittee of 11 members appointed to study pipe line divorcement and disintegration of integrated companies was expected to ask an extension of time to make its report.

The subcommittees were understood to be concerned especially with avoiding any extension of federal regulation of the industry. The committee of 36 was in session all day today considering the reports of the subcommittees, and it was reported a special meeting of the I.P.A.A. would be called to receive the report of the committee of 36 when it is ready, probably some time in January.

North Turner Valley Wildcat Extends Production 12 Miles

CHATHAM, Ontario, Dec. 12.—In North Turner Valley, Alberta, Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, got crude production in the upper porous horizon of the Madison limestone, making 42 bbls. an hour.

The location is on the west flank of North Turner Valley, approximately 12 miles northwest of the most northerly crude producer in the main South Turner Valley crude area. The strike extends the field, previously defined as 5 miles long and 1½ miles wide, to a length of approximately 18 miles, with probabilities of a further northwesterly extension of 7 miles, with estimated reserves of 1,485,000,000 bbls.

With production from only the upper porous zone, Home No. 2 will apparently rank among the major producers, without drilling to the lower porous horizon from which Turner Valley wells secure their main crude production.

R. D. Risser Chosen Chairman Of East Texas A.P.I. Chapter

Ralph D. Risser, production superintendent of Shell Petroleum Corp. at Kilgore, Tex., was elected chairman of the East Texas chapter of the American Petroleum Institute, succeeding Byron Meredith of Sinclair-Prairie Oil Co. at Troup.

R. D. RISSER

New vice chairmen chosen were R. M. Bass, Troup; J. J. Jenkins, Kilgore, and J. P. Straight, Gladewater.

W. S. Morris, Kilgore, was reelected secretary-treasurer and D. M. Kerr, Kilgore, was named assistant.

Phil Montgomery, Kilgore, district engineer, Halliburton Oil Well Cementing Co., read a paper on cementing jobs used to shut off salt water in the East Texas field.

Byron Meredith was elected advisory committee chairman; E. B. Miller, program committee chairman, and R. O. Busby, was chosen to head the membership committee.

Arguments in Madison Case Delayed to January 10

MADISON, Wis.—After a conference with defense attorneys, Federal Judge Patrick T. Stone last week certified the bill of exceptions filed by 17 individual and corporate defendants who have appealed their conviction here last January on charges of conspiring to raise and fix gasoline prices.

The jury found 30 executives and 16 oil companies guilty of violating the antitrust act. Judge Stone sustained the verdict as to five individuals and 12 corporations, but released 10 executives and one company outright and granted new trials to three companies and 15 individuals.

The Chicago Court of Appeals has announced that oral arguments have been continued to January 10 on the Government's motion to set aside Judge Stone's order dismissing the 11 individual and corporate defendants.

Healdton-Hewitt Crude Prices Reduced 12 Cents per Barrel

The Ben Franklin Refining Co. posted the following reduced prices for Healdton and Hewitt, Carter County, Oklahoma, crude oil effective on December 7: 24-24.9 gravity, 64 cents with 2 cents added for each degree up to and including 34 gravity and over at 84 cents. The company informed its customers that "the constantly declining market for refined oils, as well as other competitive conditions, necessitated the adjustment." The new price represents a cut of 12 cents on each grade included in the schedule.

Southeastern Kansas Plan Threatened by Suit

An amicable settlement of the southeastern Kansas stripper well problem, thought to have been solved last week with an agreement between producers and purchasers, was threatened Monday, December 12, when W. H. Hazlett, independent operator, asked the district court at Independence for an order restraining the proposed sale of the pipe line gathering system.

THE MARKETS*

CRUDE OIL: *Little change in tone of the market. Disquiet in the gasoline trade is exerting an adverse influence on crude, but this is offset in large measure by heavy withdrawals, not only from crude stocks but from stocks of heavy residual fuels. Underselling of production, especially that from Illinois, continues, creating market pressure in the upper Mid-Continent and even in the Southwest. Simrall Corp. announced cuts of 5 cents for Freeman crude and 4 cents for West Branch and Arenac crude in Michigan, effective December 13.*

REFINERY: *An uneasy tone pervades the gasoline market, mainly as a result of Standard of Indiana's introduction of its 67-octane third grade. Light heating oils and kerosene are firm on eastern seaboard, but easy in interior regions. Industrial fuels gaining strength rapidly, with prices firmer and stocks falling. Natural gasoline at new high for the year, with supplies scarce.*

TANK-WAGON AND POSTED DEALER: *Standard of Indiana reduced dealer price of gasoline 1 cent in Kansas City, Mo., where a furious retail price war is on, and reduced dealer price 1.2 cents in Detroit. Minor changes elsewhere.*

FINANCIAL: *Oil shares, in a week of narrow trading range, sank to still lower levels. Sun Oil, breaking from the general trend, made a new high for 1938. Average of 30 representative stocks for week ending December 10: High, 28.59; low, 27.42; close, 27.83.*

**Detailed information in market section.*

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Competitive Chaos

The action of the Standard Oil Company of Indiana in establishing a third-grade gasoline with a 67-octane rating, and of the Ethyl Gasoline Corporation in permitting the ethylizing of that grade, precipitates a situation which may serve to bring about a solution of a confused condition to the benefit of all concerned, both consumers and the industry.

Third-grade gasoline may have been anything below regular grade, often very far below. It may have been the product of mushroom skimming plants springing up in new fields.

Its quality may have depended on the price policies of the vendors. Sellers with a reputation to maintain undoubtedly offered the best product they could provide for the price.

Others may have concluded that it was foolish to offer a third grade that for many cars would be, so far as the motorist knew, just as serviceable as the regular grade.

There was also the possibility of furnishing a grade that was but a little under the octane value of the regular grade and offering it to large users at a reduction with the assurance that for general purposes it would be found satisfactory.

All these varieties of third-grade motor fuel created a situation which cried for correction.

Whether the latest developments will prove the needed remedy remains to be seen but they at least bring the problem out into the open.

The competitive chaos has worked to the injury of the industry. The opportunities offered for price-cutting, in one form or another, have contributed to the instability of the regular and premium grades and that in turn, as has been seen, to the recasting of the crude price structure.

The public is equally interested in the clearing up of this muddle. Modern cars require high-octane gasoline for its antiknock value. More and more it is becoming essential for the new models.

Older cars may be able to operate on lower octane motor fuel but there has been no assurance, outside the integrity of the seller, that the third-grade gasoline offered was within the satisfactory octane bracket.

This uncertainty has been a detriment to both the public and to the industry.

The industry has prided itself upon continuously producing a better motor fuel. It has accomplished this by better manufacturing processes, such as cracking and reforming and more recently polymerization, and hydrogenation.

All these developments have not only given the consumer improved quality but also have made possible increased yields of the essential products from a barrel of crude—an important contribution to conservation.

It has been a sound economic policy, demanded by the improvements in motors, the fullest recovery from the industry's raw material and the needs of consumers.

Unblended straightrun gasoline has been passing out of the picture. Octane value is becoming the test of motor fuel for modern cars. It costs more than the "run-of-mine" gasoline of other years but the refiner does not get any more for it. He should, at least, be entitled to a stabilized market and prices which take quality into consideration.

If that can be established it will benefit every refiner who will order his operations in line with his legitimate demand.

The recurring crises which threaten the existence of competitive units can be avoided by intelligent co-operation in sound refining and marketing policies.

Programs and Meetings

CLEVE HUFF *GEORGE BERLIN* *DAN WILLIAMS* *WALTER BIEBY*

Panhandle Chapter A.P.I. Elects Officers for New Year

The Panhandle chapter of the American Petroleum Institute, with more than 500 members, held its annual meeting, election of officers and banquet, floor show and dance last week at the Southern club, south of Pampa, headquarters city of the chapter.

Harry V. Mathews, retiring chairman, installed the new officers, and John Osborne, Pampa attorney, toastmaster, introduced prominent oil men.

The new chairman of the chapter is Walter Biery, gauger for the Sinclair-Prairie Oil Co. He has been a resident of Pampa for 10 years and a charter member of the chapter. He has been a member of the advisory board for four years and was chairman of the committee on arrangements for the annual meeting in the past two years.

First vice chairman is Dan Williams, production superintendent, Danciger Refineries, Inc., and second vice chairman is George Berlin, production superintendent, Skelly Oil Co. Cleve Huff, with Cree & Hoover Co., was chosen secretary-treasurer. All are residents of Pampa.

The Panhandle chapter has been active for nearly 10 years, starting with 35 members in 1929. The membership list for 1939 is in excess of 500 members.

The chapter was host to the Mid-Continent chapter at its annual convention in the spring. Monthly meetings are held in the city hall in Pampa, attended by 300 to 500 men. Interesting papers and pictures are presented at each of the meetings.

Reunion of Old Timers At A.P.I. Suggested

R. A. Wotowitch, of Cities Service Oil Co., commenting on the recent A.P.I. meeting, said: "It's too bad some of the pioneers were not around to note the results of their early efforts. With a well balanced schedule and a program that covered the entire range of the industry, with busy days, many conferences, five days of hustle and bustle by the vast multitude there was just one missing link. No one who has been a constant attendant at these meetings and who knows the rank and file can deny that missing characters and personages can truthfully be called the missing links."

Mr. Wotowitch has attended every meeting since the A.P.I. was organized and is well acquainted with its early history dating from the Oil Division of the Fuel Administration during the World War and as a member of that division knows all the old timers and the men of the industry to date. The absence of many men who have been associated with the industry for the past twenty-five years or longer was noted by many this year. There are still a great many of these men still on life's payroll.

Mr. Wotowitch said, "Though not active any more there is no reason why they should sit at home and now and then close their eyes and dream of the past and feel gloomy when the annual A.P.I. meeting arrives. Personally I believe with many others who have given this serious thought that it is not conducive to happy retired days."

A number of oil men present at Chicago who have served the industry for 25 years or longer suggested to Mr. Wotowitch that he start a movement to organize the 25 plus year men of the industry. The thought is to bring together the men who have served 25 years and longer in the refining and marketing branches once a year when the A.P.I. is in session, for one day or night. Other industries have such an organization.

California Producers Meet

First efforts of the independent producers of the California oil industry to stave off the collapse threatened by constant additions of oil to storage were taken at a statewide mass meeting in Bakersfield December 13.

CALENDAR

December.

CALIFORNIA OIL AND GAS ASSOCIATION, annual banquet, Biltmore Bowl, Los Angeles, Dec. 21.

January, 1939.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Detroit, Mich., Jan. 9-13.

February.

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March.

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, Ohio, Mar. 6-10.

INTERNATIONAL ACETYLENE ASSOCIATION, 39th Annual Convention, Houston, Tex., March 8-10.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention, Hotel Severin, Indianapolis, March 14-16.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 24th annual meeting, Skirvin Hotel, Oklahoma City, March 22-24.

April.

AMERICAN CHEMICAL SOCIETY, Baltimore, Md., April 3-7.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 13-14.

OIL-WORLD EXPOSITION, Houston, Tex., April 24-29.

May.

PETROLEUM ELECTRIC SUPPLY ASSOCIATION, Houston, Tex., May 2-4.

PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Rice Hotel, Houston, Tex., May 2-4.

NATURAL GASOLINE ASSOCIATION OF AMERICA, Hotel Tulsa, Tulsa, Okla., May 3-4-5.

AMERICAN PETROLEUM INSTITUTE, 9th mid-year meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

June.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

STATE CAPITALS

CALIFORNIA

FAILURE TO CURTAIL PRODUCTION in several fields, notably those in Los Angeles Basin and principally the Wilmington field, has precipitated another periodic crisis and one that may easily lead to price reductions in crude and refined oil early in the new year unless some constructive action is taken in the immediate future. The San Joaquin Valley Producers Association, Independent Oil Producers Agency, and Oil Producers Agency of California have taken over the responsibility of presenting the problem to producers in the various fields in an effort to secure effective curtailment and prevent collapse of the price structure. The initial meeting was held in Bakersfield Tuesday afternoon December 13 and a second meeting is scheduled to be held in Los Angeles December 20.

Umpire Pemberton is making an effort to secure more effective proration in the Rosecrans, Montebello, Dominguez, and Wilmington fields. The objective is to reduce California crude oil production to 600,000 bbls. per day before the close of the year. Most of the needed curtailment must come from the Dominguez, Huntington Beach, Long Beach, Montebello, Rosecrans, Santa Fe Springs, Torrance, and Wilmington fields as they are the principal contributors to the overproduction of crude oil. Excesses range all the way from 2,140 bbls. daily to 28,000 bbls. per day.

ARKANSAS

THE MAGNOLIA FIELD OF COLUMBIA COUNTY, Arkansas, was given its first proration last week. An order from the Arkansas Board of Conservation placed a top allowable of 1,000 bbls. daily for the field of four producers. The order goes into effect on December 17, 1938. For the two days preceding, the field will be shut in to take bottom-hole pressure and gas-oil ratio tests.

THE CONSERVATION BOARD will hold a meeting on December 16 at El Dorado for the purpose of determining the daily quantity of oil and gas that may be produced without waste in the following fields: Buckner of Columbia and Lafayette counties, Magnolia-Village, Columbia County; South Miller (Rodessa), Miller County; "Jones sand" and "Reynolds lime" of the Schuler field, Union County.

TEXAS

DEVELOPMENT RULES FOR THE FLAG LAKE field of Henderson County, East Texas, were issued by the Railroad Commission last week in which a drilling pattern of one well to 10 acres was specified. Wells are to be 330 feet from property lines and 660 feet from another well. A proration formula of 50 per cent on acreage and 50 per cent per well was prescribed, with 10-acre units and a maximum of 15-acre units. A gas-oil ratio of 2,000 feet per barrel was set as the displacement factor.

Ten-acre spacing units also were provided in an order for the La Rosa field in Refugio County. A straight acreage proration formula was involved with 20-acre units as the basis and a maximum unit allowance of 30 acres. The gas-oil ratio was set at 2,000 feet per barrel. Ten-acre spacing was likewise set for the Tesoro field of Duval County, with the field allowable to be allocated 50 per cent on a per-well basis and 50 per cent on acreage with 20-acre proration units.

TEN-ACRE WELL SPACING for the new Collinsville pool of Grayson County, North Texas, was recommended by operators at a rules hearing held by the Railroad Commission last week. A proration formula allocating 50 per cent of the allowable on acreage with 20-acre proration units and 50 per cent on bottom-hole pressure was suggested. Operators, however, indicated they would not object to another type of formula.

KANSAS

JANUARY MARKET DEMAND FOR GAS from the Hugoton field in southwestern Kansas and the Otis field in Rush and Barton counties, will be heard at Wichita on December 28. Gas volumes will be computed on a 2-pound pressure basis. On the same day the commission will consider rules and regulations for well spacing, unitization, the taking of potentials and individual well allocations in the Bemis field in Ellis County.

FINAL ARGUMENTS ON DECEMBER market demand for crude oil from Kansas fields, and special allocations asked for, will be heard by the Kansas Corporation Commission on Friday, December 17, at Wichita. The special allocations requested are as follows: Albert pool, 600 bbls.; Barnsdall Oil Co., pipe line system, 580 bbls.; Continental Oil Co., pipe line system, 10,492 bbls.; Derby Oil Co., 2,200 bbls.; Falcon Refining Co., 657 bbls.; J. J. Hall, 125 bbls.; Kanotex Refining Co., pipe line system, 5,000 bbls.; Lario Oil & Gas Co., 26 bbls.; McCullough pool, 400 bbls.; Nunn pool, 100 bbls.; Otis pool, 2,000 bbls.; Shallow Water pool, 1,400 bbls.; Socony-Vacuum Oil Co., 85 bbls.; Vickers Petroleum Corp., 1,000 bbls., and Westhusin pool, 335 bbls.

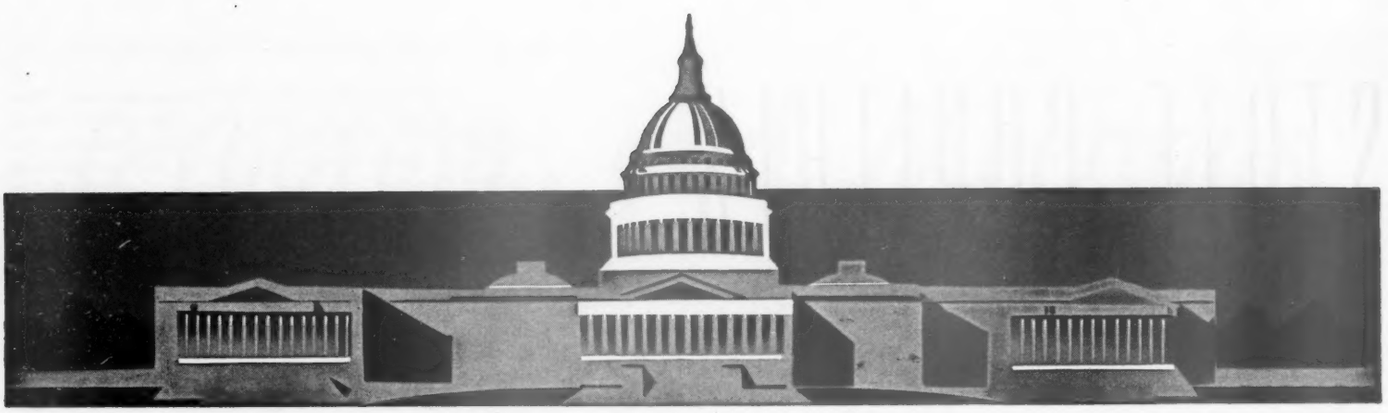
OKLAHOMA

PRODUCERS AND PURCHASERS of crude oil in Oklahoma have been notified by Conservation Officer William J. Armstrong of a meeting at Oklahoma City at 2 p.m. Wednesday, December 21, at which consumers demand for crude oil in January will be discussed and recommendation made to the Corporation Commission. Rules and regulations for taking potentials in all Class C pools in the state for the six-month period beginning February 1 will also be discussed.

JANUARY MARKET DEMAND for Oklahoma crude oil will be determined by the Corporation Commission on December 22, following the market-demand hearing at Oklahoma City called by William J. Armstrong, conservation officer.

OKLAHOMA CORPORATION COMMISSION on November 30 approved of rules and regulations suggested by W. J. Armstrong, conservation officer, governing the time, manner and method of taking potentials of all wells and leases in Class B pools in Oklahoma for the January, 1939, potential period, and for the reclassification of any Class B pools. Class B pools include Allen, North Bethel, Billings (Wilcox sand), Crescent, Earlsboro pools, Edmond, Fish pools, Jesse, Keokuk Falls, Konawa, Little River, East Little River, Lucien, Maud, Mission, Moore, Olympic, Sasakwa, Sasakwa townsite, Searight, North Searight, Seminole City, East Seminole, Seminole proper, Shawnee, St. Louis and North Wellston. The potentials of the above pools taken in January will stand effective until July 1, 1939.

State capitol, Little Rock, Arkansas



Laws of States on Well Spacing Believed Beyond Attack

By HENRY D. RALPH

WASHINGTON, D. C., Dec. 12.—The Supreme Court indicated it would uphold the constitutionality of the Oklahoma well-spacing law when, during arguments of the case last week, it refused to hear arguments on behalf of the law. After the attorneys for the appellant had concluded their argument, the court announced it did not desire to hear opposing counsel, an unusual procedure which invariably indicates the appellant has not made out a case which warrants rebutting and that all the justices are agreed further argument is unnecessary.

The upholding of the Oklahoma well-spacing law means that states have ample powers to enact reasonable legislation for the conservation of oil, and that the well-spacing laws and regulations of other oil states are beyond attack on federal constitutional grounds.

The Oklahoma case was brought by Russell B. Patterson against Stanolind Oil & Gas Co. and Amerada Petroleum Corp. Patterson lost the suit in the Supreme Court of Oklahoma and appealed to the Supreme Court of the United States on the plea the law violates the federal Constitution. The Oklahoma Corporation Commission, through its conservation attorney, Earl Foster, intervened as a friend of the court and filed a brief in support of the law.

There was no dispute as to the facts. Patterson owned one-half of the oil royalty rights on a tract of land in the North Wellston pool in Lincoln County, Okla. On March 20, 1936, the two oil companies concerned brought in a producing well on this property, the first producing well in the pool. Three months later the Oklahoma Corporation Commission, acting under the well-spacing law of 1935, divided the pool into 10-acre tracts and directed that only one well should be drilled in each tract. The law provided that royalty owners in each tract should share in the royalties in proportion to the land in each tract covered by their royalty rights. In the 10-acre tract containing the discovery well, Patterson owned one-half the royalty rights on six and one-quarter acres and the remaining three and three-quarters acres were owned by another party. Application of the law, therefore, meant that Patterson's royalties were reduced by about one-third, and he sued the two oil companies for the royalties which they were paying to the owner of the royalty rights on that portion of the tract which contained no well.

Three main arguments against the constitutionality of the law were made for Patterson by his attorneys, A. S. Norvell, W. M. Haulsee, and R. J. Roberts, of Wewoka, Okla. They contended the act violates the constitution of the United States by taking private property without due process of law and denying equal protection of the law, that it impairs the obligation of contracts, and that proceedings of the Corporation Commission in fixing its well-spacing order were arbitrary, unreasonable, and discriminatory.

Arguments Presented

In support of these arguments the attorneys maintained that the police power of Oklahoma does not extend to the regulation of the production of a natural resource and cannot properly be used to deprive Patterson of one-third of his mineral rights and give this to the owners of an adjoining tract. They contended the state has no power to regulate an industry in this manner and that the oil industry is not a public utility nor one affecting the health or morals of the state and is therefore beyond reach of the state's powers.

Another argument was that "the act is not a true conservation act because it does not attempt to preserve or protect private property after the same has been acquired, but seeks to prevent initiative in private industry, and prevent the acquisition of private property in oil and gas. Appellant can contend that no property exists in oil and gas prior to the time when same has been reduced to possession. Well-drilling units prohibiting oil and gas wells do not protect private property, but prevent the acquisition of oil and gas in place which does not become private property until possessed."

The contention was advanced that the real purpose of the statute is an effort to secure to lessees generally a realization of a fair ultimate profit on their assets and not really to conserve natural resources. The attorneys also argued that the Corporation Commission did not have sufficient evidence to justify its well-spacing order for this pool since only one discovery well had been drilled.

The brief filed for the two oil companies, signed by Guy H. Woodward, James A. Veasey and Ray S. Fellows of Tulsa, declared that the well-spacing law does not result in taking property from a royalty holder and that, even though it may restrict the rights of individuals, it does not violate the constitutional guarantees of contract and due process of law, and that the police power of the state may be applied in the interest of a superior public necessity. It was pointed out that because of the supreme importance of gas-energy in securing the greatest ultimate recovery of oil from the common source of supply, the Oklahoma legislature, through a series of statutes beginning in 1905, has consistently attempted to prevent the use of reservoir energy for oil-producing purposes by means that unreasonably interfere with obtaining the largest ultimate recovery and to protect the correlative rights of the several owners of such common source of supply so each owner may have an opportunity to gain an equitable share of all the oil in the pool. Several Supreme Court cases were cited as authority for such procedure. The 10-acre spacing rule, the court was told, provides for equal drainage of the entire tract and for equal use of the gas-energy under the 10-acre area on which discovery well is located, and it was argued that in no other way could the right of the other property owners be preserved if most efficient use is to be made of the gas pressure. It was also contended there is neither evidence nor argument to indicate that "the injury sustained by the appellant, if any, is greater than the benefit derived by appellant by a conservation of the gas and gas-energy, maintenance of uniform bottom-hole pressure, prevention of underground waste and the promotion of the greatest ultimate recovery from the same common reservoir."

In defense of the state's police power, the oil companies' brief cited many Supreme Court cases affecting the oil and other industries in which states were declared to have ample powers to interfere with private rights of an individual where the result benefited the entire community, and reviewed the judicial history of a number of state conservation laws. The brief declared:

"Appellant suggests that the statute here under consideration is one of economy in that it

(Continued on Page 26)

Automatic Injector
Ejector, Syphon or Jet Pump
"Navy Type" Liquid Level Gage
"Safeguard" Automatic Liquid Level Gage
"All-Iron" Automatic Liquid Level Gage
Gas Engine Lubricator
Snap Lever Oiler
Plain Brass Oil Cup
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FRAME
Screw Plunger Grease Cup
Spring Compression Grease Cup
Automatic Electric Sump Pump
Automatic Cellar Drainer (Water or Steam Operated)
Dipless Air Cock

Petroleum Electric Power Club Meeting in Tulsa

Simplification of schedules and revision of rates to make them more attractive to prospective purchasers in the petroleum industry was the principal topic at the tenth annual meeting of the Petroleum Electric Power Club at the Hotel Mayo in Tulsa December 7, 8 and 9. More than 60 representatives of power companies, electrical dealers, and oil men attended. Place and date for next year's convention will be announced by the board of directors later.

New officers selected are: President, O. W. Jones, Central Power & Light Co., Corpus Christi, Tex.; vice president, E. A. Armstrong, Public Service Co. of Northern Illinois, Chicago, Ill. H. E. Roberts, Empire District Electric Co., Joplin, Mo., was re-elected secretary and treasurer. Mr. Jones served as vice president during the past year and succeeds C. N. Robinson, Public Service Co. of Oklahoma, Tulsa, in the presidency.

E. A. Armstrong, vice president; O. W. Jones, president; H. E. Roberts, secretary-treasurer

The board of directors for 1939-1940 announced at the Thursday morning session are K. E. Johnson, Arkansas Power & Light Co., Pine Bluff, Ark.; O. W. Jones; G. A. Coleman, Public Service Co. of Oklahoma, Tulsa; P. M. Cordell, Texas Electric Service Co., Fort Worth, Tex.; W. G. Moore, Texas Power & Light Co., Dallas, Tex.; and Duane Landon, St. Joseph Rural Light & Power Co., St. Joseph, Mo. Mr. Jones and Mr. Johnson are holdovers.

Directors for 1938-1939, selected at the last annual meeting, are W. H. Stueve, Oklahoma Gas & Electric Co., Oklahoma City; G. H. Weckel, Kansas Gas & Electric Co., Wichita, Kans.; F. A. Graham, Kansas City Power & Light Co., Kansas City, Mo.; J. S. Elliot, Southwestern Gas & Electric Co., Shreveport, La.; H. E. Roberts and E. A. Armstrong.

Much of the session was given to reviewing the progress during the 10 years since the club was organized for the purpose of studying how the power industry could best serve the oil business. Interesting results were obtained from the plan of having representatives of the oil industry discuss what power companies could do to secure more accounts from oil companies.

Thursday afternoon, George Isley, engineer, Shell Petroleum Corp., addressed the club on "Why Power Utilities Fail to Secure More Oil Pumping and Production Loads in the Oil-fields," and Stanley Learned, chief engineer, Phillips Petroleum Co., on "Electric Power for Pipe Line Pumping."

Mr. Isley, giving his own views formed from a study of power rates affecting his company's properties, declared the power companies fail to obtain some oil-field accounts due to three things; costs, schedules, and sales efforts. He pointed out that power companies frequently require the oil producer either to invest considerable money for running a line into his property or to guarantee taking so much current. This requiring a deposit frequently deterred producers from selecting electric current as a pumping medium and allowed other forms of power to be introduced for pumping. The established method in a field is very difficult to overcome, and it would be to the power company's advantage to get into the field first.

Existing schedules were criticized by Mr. Isley as being too complicated, containing far too many clauses that affect the customer's bill, and varying far too widely among power companies. He suggested the power companies submit several simplified schedules that would allow the consumer to determine under which classification he was purchasing power as this frequently would lead him to adjust his requirements and thus reduce his total costs. He then demonstrated with charts that for the same amount of current purchased, numerous total bills for power could and do result under the present system. Standardization of voltages to help eliminate large stocks of electrical equipment on the part of the oil producer, would be another aid in selling of power, he said.

Stanley Learned pointed out that in the final analysis the cost of pumping oil was the determining factor in the selection of power in the pipe line industry and that the power manufacturers need more than the natural advantages of electricity if they are to obtain more pipe line business. Lower rates, simplification of schedules and standard voltages would be a great help, according to the speaker.

After the discussion, the meeting voted to instruct the board of directors to form a committee to meet with a suitable committee from the oil industry to work out a contract and rate schedule that would be satisfactory to both industries.

The Thursday morning session was opened by the welcoming address of Fred W. Insull, president, Public Service Co. of Tulsa, followed by "After Ten Years" by Don McKee, vice president, Empire District Electric Co. Jerry Robertson, power engineer for Public Service Co., Tulsa, showed in his paper, "How the Power Company Can Help the Oil Producer," that all too frequently the power salesman considered his job completed with the signing of the contract. He showed that by helping the producer study his problems and reduce his power costs, more power could be sold because the satisfaction of the producer was an incentive to further purchases of electric current.

"Electrification of Oil Refineries," by G. H. Weckel, Kansas Gas & Electric Co., Wichita, Kans., was the concluding paper at the Thursday meeting.

At the Friday session Oscar Hass of Allis-Chalmers Manufacturing Co. discussed "Benefits of Variable Speed Drive"; P. E. Loye, of Reda Pump Co., delivered a paper on "Submergible Electric Pumps"; Al Jones, of General Electric Co., talked on "Industrial Control Equipment for the Oil Industry"; and B. H. Berkeley of Westinghouse Electric & Manufacturing Co. gave a paper on "Electric Power Applications."

WASHINGTON

(Continued from Page 24)

permits the lease owner to drill one well where two might otherwise be necessary in satisfying such owners' lease obligation, rather than a proper exercise of the state's police power as a conservation measure. Granting the result of the application of the statute may be in some cases an economical benefit to the lease owner, we are convinced that the mere fact that incidental benefits may result from an application of the law will not militate against its validity, but rather substantiate the constitutionality of the act.

"If, as argued by the appellant, the statute does, in fact, result in a lower cost of producing oil and gas, the result is to be commended rather than condemned, because it will undoubtedly encourage the development and production of oil and gas that would otherwise remain in the ground to the detriment of the owners and the public welfare. It should be kept in mind, however, that the primary and paramount purpose of the statute in question is to prevent waste of the state's natural resources and increase the ultimate recovery thereof."

The brief filed by Earl Foster for the Corporation Commission pointed out that the question involved has become of vast public interest in all of the important oil-producing states because there are similar statutes in Texas, New Mexico, and Louisiana, and somewhat similar regulations under general conservation statutes in Arkansas and Kansas. He declared that Patterson in this case is relying on the naked common law rule of capture that a landowner or lessee becomes the owner of the oil and gas produced by wells on his land whether such oil and gas inhabited the particular land or adjoining tracts, but insisted that this law of capture can be modified by statutes designed to prevent waste.

To impress the Supreme Court with the importance of this case, the brief for the Corporation Commission contained a concise historical account of conservation legislation in the oil states and the pressure put upon them by the federal Government during the past 15 years to take all possible precautions to prevent the waste of gas and to recover the greatest possible amount of oil from pools. The experiences of various states with unrestricted drilling were recounted to show the court the justification for the Oklahoma well-spacing law and its method of application. In fact, the brief of the Corporation Commission was virtually a treatise on the function of gas pressure in oil production, although it was liberally interspersed with citations to show that courts have many times recognized this fact in passing on various types of conservation laws.

British Columbia Gasoline Case

VANCOUVER, British Columbia.—The British Columbia appeal court has continued an injunction restraining the provincial Coal and Petroleum Board from enforcing a reduction of from 3 to 6 cents per gallon in retail gasoline prices. The injunction will remain in force until January 9, when a trial of the validity of the order will open.

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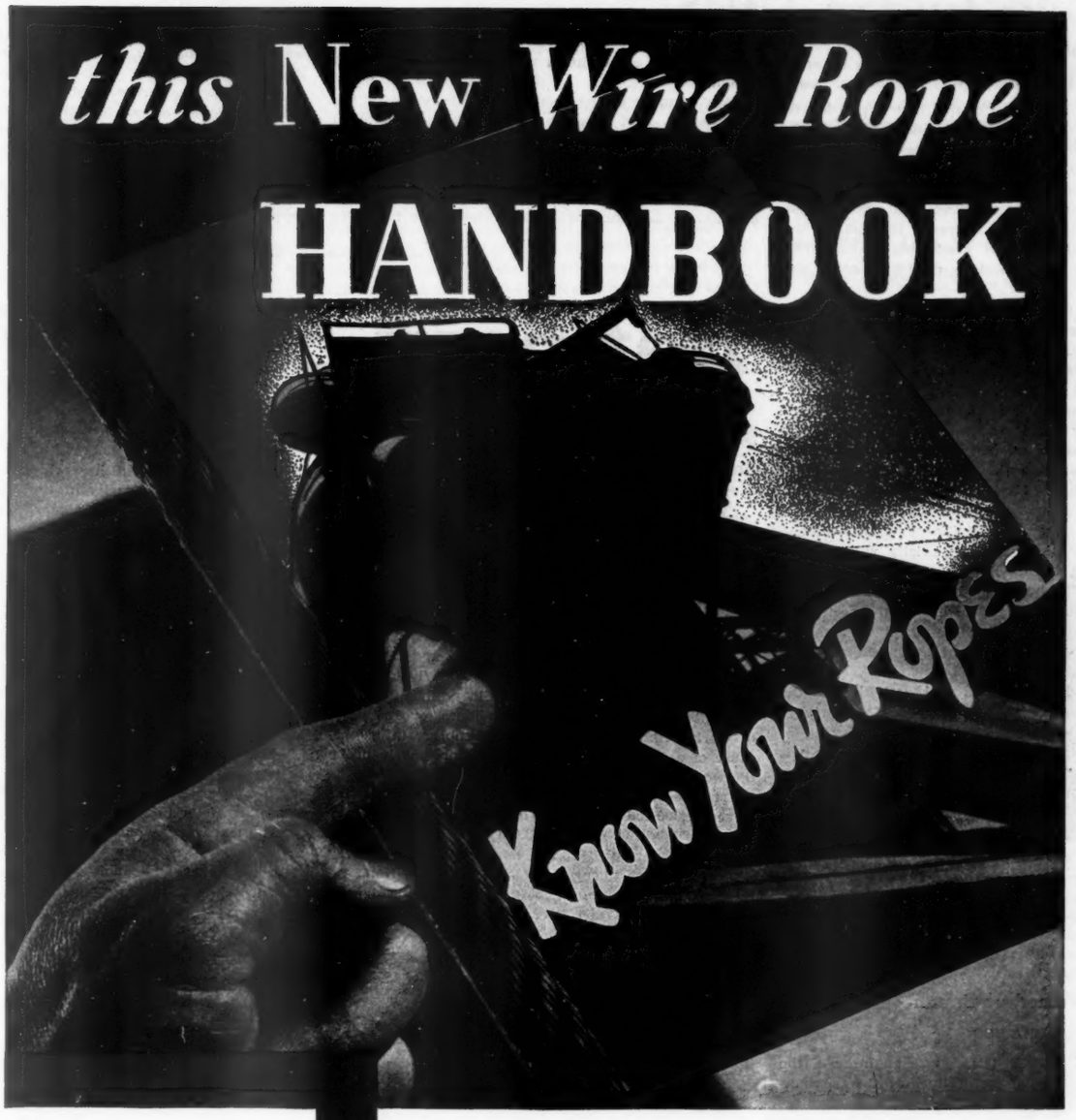

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Natural Gas News

A.G.A. Natural Gas Section To Be Moved to New York

The managing committee of the natural gas department, American Gas Association, has announced the removal of the section headquarters from Dallas, Tex., to New York City, effective January 1, 1939.

E. H. Poe, secretary of the section, will remain in charge of all natural gas activities, and will continue to contact the natural gas industry throughout the United States from his new headquarters, where all other sections of the American Gas Association are now located.

The consolidation of the two offices, the announcement says, will effect a greater ease of cooperation among the various other sections of the association and enable the natural gas industry to be better and more completely serviced by the association.

"The widespread growth and expansion of the natural gas industry during the past few years, and the according increase of potential markets in unsaturated territory has prompted this move, according to the managing committee. Having a headquarters in New York, the industry will be closer to other organizations conducting research activities in which natural gas companies are interested, especially with respect to problems of exploration, production, and scientific developments. Working closer with the other departments of the association should enable the section to better coordinate its activities designed to maintain the industry's position as one of the most stable on the American business front.

"The nationwide programs and activities of the American Gas Association can be more closely tied-in with the natural gas industry's needs. Having all of the facilities of the general headquarters at hand, it is expected the natural gas section may be of increasing value to its members."

Hamilton Merger Approved

CHATHAM, Ontario.—Shareholders of Union Gas Co. of Canada, Ltd., approved an agreement for merger of United Fuel Investments and Dominion Natural Gas Co. interests in the Hamilton, Ontario, area.

C. F. deMey Named Chairman A.G.A. Rate Committee

Appointment of C. F. deMey, rate engineer of the Columbia Engineering Corp., Columbus, O., as chairman of the rate committee of the American Gas Association has been announced by Conrad N. Lauer, president of the association.

Now beginning its nineteenth year, the rate committee was formed in 1920 when the executive board authorized George B. Cortelyou, then president of the association, to appoint a committee "to make and present studies and recommendations to the gas industry on all phases of rate-making and rates, including the fundamental basis for determining proper rate levels; the structures, forms and types of rates which should prove most equitable to the utilities and their customers, and at the same time promote most effectively the use of gas, and any other matters having a direct bearing on gas utility rates."

Drastic Powers Under New Alberta Conservation Act

EDMONTON, Alberta.—Primarily designed to eliminate the waste of natural gas in Turner Valley, the new Petroleum and Natural Gas Conservation Act, passed at the recent special session of the provincial legislature, confers drastic powers on the Conservation Board, consisting of Chairman W. F. Knode, C. W. Dingman, and Fred G. Cottle.

The board is given wide powers. No order of the board is open to review in any court, and no legal action can be taken to restrain the board. Furthermore, the board is empowered to deal with new problems arising out of conservation without any further legislation.

Any member of the board may be removed by the government upon representation from the provincial legislature; and any order of the board may be revoked by the government.

Provision is made for the surrender by any operator to the board of rights to produce prescribed oil or gas quotas, and the board may resell these rights to other operators, the proceeds being deposited in a special compensation fund to reimburse operators. The compensation will be determined from time to time by negotiation; and if the fund proves insufficient, the board is empowered to make a levy on the assessed values of petroleum properties.

The board is empowered to take over any well whose owner fails to comply with its orders, and to close or operate any well; duly accounting to the owner for any net proceeds of operation. Fine on summary conviction of not less than $100 or more than $1,000 for each offence is provided; and not less than $50 or more than $500 for each day the offense is repeated.

For purposes of conservation of oil or gas, or repressuring, the board is authorized to purchase any

Refinery Expansion

Standard Oil of Indiana Refineries Set World's Record for Safety

A new world's safety record for refineries and an outstanding record in accident prevention for the wholesale and retail marketing department of the entire petroleum industry are included among the safety records set by Standard Oil Co. of Indiana, which won 17 awards for accident prevention from the American Petroleum Institute, President Edward G. Seubert of Standard announced today.

The refinery safety record was broken for the second time in five years by Standard's Whiting, Ind., refinery, the largest complete refinery in the world, when it completed 3,631,697 man-hours, or 166 days, of work without loss of time or disabling injury because of accident. The same refinery previously broke the world's record with 2,773,435 hours.

The refining department won seven awards for eleven 1,000,000 man-hour or more safety records. They are Whiting refinery, 3,631,697, 2,907,341, 1,164,195, 1,918,514 and 1,653,119 hours; Whiting refinery mechanical department, 3,312,824; Neodesha, Kan., refinery, 2,271,754; Whiting refinery heavy oils department, 1,668,356; Wood River, Ill., refinery, 1,324,221; Casper, Wyo., refinery, 1,318,426; and Neodesha refinery mechanical department, 1,209,124.

British American Oil Co. Finances Expansion of Refining and Marketing

TORONTO, Ontario.—To finance expansion of its refining and marketing activities, British American Oil Co. has issued 150,000 treasury shares, bringing its outstanding and listed shares to 2,772,642. Proceeds will be used to replenish working capital expended for increasing the capacity of the Montreal refinery, building a new refinery at Calgary, Alberta, improving distributing facilities and extending the company's crude production.

Process to Boost Yield of Gasoline Is Announced

TORONTO, Ontario.—Discovery of a process increasing the gasoline yield from crude oil was announced by the physics department of Toronto University.

The process was discovered by Dr. C. E. Barnes, assistant in the department, working in conjunction with engineers from the British American Oil Co. and the Baily Meter Co. of Cleveland.

The discovery, which the announcement said "may prove to be of considerable importance to the oil and chemical industries," applied particularly to processes used in increasing the gasoline yield from residues.

Ontario Refining Company Extends Marketing Facilities

PORT CREDIT, Ontario.—The Good Rich Oil Co., operating a refinery of approximately 2,000 bbls. daily capacity, is extending its marketing service from the Central Ontario areas into southwestern Ontario. Crude is brought to the refinery by tankers from Chicago.

Recently completed refinery and plant grounds at San Lorenzo, Argentine, S. A.

well or surrounding property, the price to be fixed by arbitration if necessary. The board is empowered to levy a tax on all petroleum property exceeding 10 mills on the dollar of assessed value, to cover expenditures incurred by the board for each year ending June 30. Provision is also made for the working out by the board within six months of a compensation scheme for operators affected by the restrictions.

Natural Gas Convention In Tulsa May 8-11, 1939

Chairman T. R. Weymouth has appointed all standing committees to serve for the coming year, as committees for the Natural Gas Section convention to be held in Tulsa, May 8-11, 1939. Lists of committee appointees will go forward to the membership within a few days.

The program committee, headed by Elmer F. Schmidt, vice chairman of the section, would appreciate suggestions of subjects and speakers for the May meeting.

To Plan Vermilion Distribution

VERMILION, Alberta.—The Wain Town Gas & Oil Co., of Wainwright, has engaged A. I. Payne, engineer, of Edmonton, to plan a natural gas distribution for the town of Vermilion.

Pipe Line Activity

Humble to Lay 20-Mile Line To the Flag Lake Pool

Humble Pipe Line Co. has announced plans to lay a pipe line to the Flag Lake Woodbine sand pool of northwestern Henderson County, Texas, about 9 miles southwest of Mabank, which has been without an outlet since its discovery several months ago.

The line will be 20 miles long, and will run from Humble Mildred station in Navarro County west. It will be of 4- and 6-inch pipe. The line was proposed some months ago, but Humble withheld announcement until operators had agreed upon and the Railroad Commission had approved a 10-acre spacing rule.

Saskatoon Gas Line Project May Cost $5,000,000

SASKATOON, Saskatchewan. — The Saskatoon city council had entered into an agreement with Walter F. Thorn and associates granting them the exclusive right to build and operate a natural gas transmission line and distributing system for Saskatoon. The agreement is subject to approval by the Saskatchewan local government board and by the ratepayers. The Thorn interests are giving a $200,000 bond for carrying out the project which involves ultimate outlay of around $5,000,000 for transmission and distribution. They have also undertaken to spend $200,000 in drilling for gas in Saskatchewan, where they control potential gas acreage in the Lloydminster and Unity areas, with open flow of 47,000,000 feet a day.

International Line Now Proposed in Alberta

CALGARY, Alberta.—A new proposal for a pipe line outlet for Turner Valley crude is an international line to carry both Alberta and Montana crude to Puget Sound. The proposal, which is being discussed by both Alberta and Montana operators, is an alternative to a proposed all-Canadian line from Turner Valley to Vancouver, to be constructed with assistance from the British Admiralty.

On Hope Natural Gas Co. line in West Virginia

Natural Gasoline

Recent Report Shows Increased Natural Gasoline Production

The production of natural gasoline increased in October, 1938, according to a report prepared by the Bureau of Mines. The daily average in October was 5,927,000 gallons compared with 5,713,000 gallons in September and 6,058,000 gallons in October, 1937. Practically all fields increased their production, the most outstanding gains occurring in the Oklahoma City, Panhandle, and East Texas districts.

Material withdrawals were made from stocks both at refineries and plants and terminals in October. Total stocks on October 31 were 284,382,000 gallons; this was 58,296,000 gallons less than stocks on the first of the month but nearly that amount higher than stocks of October 31, 1937.

Shipments to jobbers and retailers were materially higher than in September but exports more than trebled and rose to a new high record. Total exports in October were 29,190,000 gallons, compared with 8,316,000 gallons in September.

The average vapor pressure of shipments to refineries and retail outlets increased while that of shipments to refinery-owned bulk plants and exports decreased. The weighted average for the month was 20.0 pounds compared with 19.6 pounds in September, and 20.5 pounds in October 1937.

OCTOBER RECEIPTS AND DELIVERIES BY DISTRICTS

(Thousands of gallons)

	Deliveries		Receipts	
	To refineries	Exports	At refinery-owned bulk plants	By jobbers and retailers
East coast	.....	.....	8	35
Appalachian	3,647	478	282	1,240
Ind., Ill., Ky., etc.	956	.....	3,467	3,133
Oklahoma	45,008	721	38	1,842
Kans., Mo., etc.	3,488	.....	560	696
Texas Inland	42,075	89	.....	.....
Texas Gulf	12,918	25,965	317	3,544
La. and Ark.	5,590	.....	15	1,345
Rocky Mountain	7,282	257	59	139
California	53,882	1,680	.....	626
Total	174,846	29,190	4,746	12,600
Daily average	5,640	942	153	406
Total (thousands of barrels)	4,163	695	113	300
Average V.P.	20.8	17.2	17.1	15.9

PRODUCTION AND STOCKS OF NATURAL GASOLINE

(Thousands of gallons)

	Oct. 1938	Sept. 1938	Jan.-Oct. 1938	Jan.-Oct. 1937	At refineries
East Coast	.....	.....	.....	.....	3,990
Appalachian	5,564	4,573	53,433	58,200	714
Ill., Mich., Ky.	1,215	1,028	10,278	9,900	3,570
Oklahoma	41,167	37,621	392,787	406,500	1,848
Oklahoma City	12,025	10,254	117,993	137,400	.....
Osage County	4,982	4,523	42,192	46,800	.....
Seminole	10,364	9,975	99,845	101,000	.....
Rest of state	13,796	12,869	132,757	121,300	.....
Kansas	4,737	4,192	43,577	46,700	.....
Texas	57,222	53,370	542,934	507,100	7,896
Gulf	6,252	6,117	51,149	30,700	7,224
East Texas	15,790	14,618	156,838	156,600	.....
Panhandle	19,350	17,813	188,106	186,200	.....
North Texas	2,262	2,188	21,286	21,400	.....
West Central	6,093	5,506	57,468	58,000	.....
Rest of state	7,475	7,128	68,087	54,200	.....
Louisiana	7,375	7,071	71,463	87,300	84
Arkansas	2,398	2,299	19,940	9,400	210
Rocky Mountain	7,612	6,759	65,169	61,800	4,956
California	56,460	54,489	552,995	516,200	123,732
Huntington Beach	3,537	3,420	35,554	34,500	.....
Kettleman Hills	16,119	15,810	154,658	152,900	.....
Long Beach	8,115	7,875	77,670	71,100	.....
Santa Fe Springs	5,196	5,032	53,255	52,900	.....
Ventura Avenue	5,001	4,517	46,915	48,800	.....
Rest of state	18,492	17,835	184,943	156,000	.....
Total	183,750	171,402	1,752,576	1,703,100	147,000
Daily average	5,927	5,713	5,765	5,602	.....

Ontario Natural Gas Industry

TORONTO, Ontario.—Official figures show that the Ontario natural gas industry, though confined to the southwestern part of the province, ranks third in importance among Ontario mineral industries, being exceeded only by the copper-nickel and gold industries. For the first nine months of 1938 the gas output was 10,746,334,000 feet valued at $6,588,798. In that period the industry employed 1,058 people and distributed $1,243,928 wages, not including royalties and rentals.

Turner Valley Dividends

CALGARY, Alberta.—Dividends almost double those for 1937 will be paid by Turner Valley oil companies this year, a recent tabulation showing payments by 17 companies totaling $2,153,773.35. Payments by Royalite Oil Co. aggregate $1,059,605.50.

Bethlehem Supply Acquires International Supply

Another of America's major steel corporations became a major factor in the oil well supply industry last week when Bethlehem Supply Corp., subsidiary of Bethlehem Steel Co., acquired the International Supply Co. and its manufacturing division, the Oklahoma Iron Works. The transaction involved well over a million dollars and the expansion program provides for early investment of another half million dollars in improving and increasing the manufacturing facilities in the Tulsa plant.

The purchase was announced by Eugene Grace, president of Bethlehem Steel, upon his arrival in Tulsa with a party of Bethlehem executives, including Paul Mackall, Quincy Bent and F. A. Shick, vice presidents. The negotiations for International Supply Co. were carried on by A. E. Ballin, who has directed the company's affairs since the death of its founder, James W. Sloan. Mr. Grace stated that G. A. Tompson, executive vice president for Bethlehem Supply Co. in Tulsa, would continue in command of the Bethlehem interests, and expressed the hope Mr. Ballin would remain with the new firm. He also expressed the wish that the entire International personnel would continue with the new company.

The new firm steps into a place of prominence in the supply industry, with a network of some forty supply stores and offices throughout the Mid-Continent field. Bethlehem, which already had some twenty stores and offices, acquired an equal number in the purchase of International, in addition to the manufacturing facilities of the International firm, which was founded by Sloan and associates in 1908 as one of the pioneer foundries and manufacturing plants in the then nebulous Mid-Continent field.

The Bethlehem purchase and expansion program is one of the most important developments in the petroleum industry and supply business in recent years. It was hailed by oil industry executives as an expression of confidence in the future of the industry and an indication of better business outlook for the immediate future. Commenting on the entrance of his firm into the oil industry as a full-fledged manufacturer and supplier of oil well supplies, Mr. Grace said that, "Bethlehem stands ready to go to any length to develop the oil-field business anywhere east of the Rockies, with Tulsa as headquarters. There will be no limit to the investment Bethlehem will make when the opportunity for expansion is consistent with our policies."

The Bethlehem executives celebrated the event with a dinner and a luncheon attended by oil company executives and civic leaders of Tulsa.

EXECUTIVES OF COMPANIES INVOLVED

G. A. Tompson, executive vice president of Bethlehem Supply Corp.

A. E. Ballin, vice president of International Supply Co., and Oklahoma Iron Works

TEXAS HEARING

(Continued from Page 15)

no withdrawals in the next three months. The company's gasoline inventory, 1,098,000 bbls., was about 100,000 bbls. above a year ago. He considered 80,000,000 bbls. as the desirable gasoline stocks March 31 and thought crude stocks near a minimum. He suggested strict ratable purchases and production with the same price for all in a field.

There was a noticeable conciliatory effort on the part of all companies to get together to solve common problems of the industry. In this vein, Humble agreed to continue taking for the time being all of Barnsdall's West Texas production. In the K.M.A. field, Sinclair said it would be willing to adopt 100 per cent takings from its 148 connections if it could arrange to swap a like amount of East Texas or some other equivalent crude.

In the testimony regarding the Cayuga field it was reported that Tide Water Associated has informed producers that it would discontinue its purchases soon, leaving some 7,800 bbls. daily production without an outlet. This company is the only line serving the field and Cayuga producers felt it should not be allowed to retire from buying without consent of the Railroad Commission. Charles F. Roeser, Cayuga producer, told the commission that if Tide Water is allowed to withdraw from Cayuga it would set a precedent that would allow pipe line companies to do likewise in other fields; that the company was not fulfilling its moral obligation as a common carrier. It was also brought out in testimony of R. O. Dietler of Standard of Indiana, through Mr. Roeser's questioning, that Indiana's subsidiary, Pan American, had been approached to buy 5,500 bbls. of Cayuga crude daily at 10 cents under the posted price if the field lost its outlet. A hearing in which the Cayuga situation will be given further inquiry has been scheduled for December 16.

Dr. Joseph E. Pogue, Chase National Bank, forecast a 4 per cent increase in gasoline demand for next year but stated production should not be increased in proportion due to the large carry-over of gasoline and crude stocks, an estimated 17 per cent decrease in exports and increased recovery of gasoline. An increase of 2 per cent in crude runs would care for demand. He estimated crude demand for 1939 at 3,444,000 bbls. daily in contrast to about 3,323,000 bbls. in 1938. He felt gasoline stocks should be no higher than 80,000,000 to 85,000,000 bbls. on March 31. To hold stocks to this economic level crude runs to stills should approximate 3,100,000 or 3,200,000 bbls.

In regard to minimum working stocks of crude he estimated between 230,000,000 and 250,000,000 bbls. would be an absolute minimum to which they should be reduced, but felt they were nearing the basic limit to which they should be lowered. His conclusion regarding the first quarter of 1939 was that any increase in production would go to storage or force refinery runs too high.

In Fred Van Covern's opinion crude runs should not exceed 3,100,000 bbls. daily to arrive at adequate gasoline working stocks of 82,000,000 bbls. on March 31. He felt crude inventories should be reduced no further than the "mythical" figure of 260,000,000 bbls. in current trend, but that stocks of 245,000,000 bbls. would be adequate at the present time. This, however, was not minimum working stock, which he felt could be arrived at only after all companies had furnished data regarding what they considered their minimum stock.

Mr. Roeser in his testimony stated that stocks have reached this economic low and he came out strongly in favor of top allowables. This would curtail drilling, he stated, citing K.M.A. as an example of the need for such ruling. He also favored ratable takings from all fields.

E. B. Reeser, of Barnsdall, also favored ratable taking and urged a change in the basis of crude prices based on the recovery value of crudes as a means of eliminating "selective buying."

Officials representing practically all the large refining companies operating in Texas were quizzed regarding present stocks of crude and gasoline; how they compared with one year ago and with those of October 1 this year; limit set for stocks of gasoline March 31, 1939, and if the trend since October 1, 1938, had been in that direction; and what they considered an adequate working stock of crude oil.

Obituaries

EDWARD F. SIMMS, 68, Houston, Tex., oil operator, died recently in a Baltimore, Md., hospital. He organized Simms Petroleum Co.

DAN McCRAY, 74, Houston, Tex., for many years with the Standard Oil Co., died from injuries when struck by a street car. He is survived by a brother, W. F. McCray of Owensboro, Ky.

INTERNATIONAL

Mexico Signs $17,000,000 Barter With Germany

The Mexican Government signed an agreement December 8 by which $17,000,000 worth of petroleum from confiscated American and British properties will be bartered for German merchandise, machinery and other commodities during 1939.

An additional part-cash arrangement was completed coincidentally by which the German Navy will be supplied largely with Mexican Government produced gas-oil during the coming year. It is considered likely most of this gas oil for naval use will come from the 15,000 bbls. of crude per day being processed at Eastern States Petroleum Co. Houston, Tex., refinery. It is known in this country that Mexican technicians are incapable of operating the seized refining facilities in an efficient manner and the equipment has been permitted to deteriorate rapidly since its seizure from private companies March 18.

This vast barter arrangement, dwarfing any that Mexico has made since the seizure, is expected further to reduce United States sales to Mexico, which are already at less than a third of their former level.

"It was learned beyond any possibility of error," wrote Frank L. Kluckhohn, the New York Times correspondent in Mexico, "that a $17,000,000 barter arrangement with Germany was completed by the Mexican secretary of finance, Eduardo Suarez, and a representative of W. R. Davis of New York." The report continues:

The Mexican Government is expected to obtain about $8,000,000 in cash during 1939, in addition to more blocked marks, by the second deal, with Ernst Jung of Hamburg, by which the German Navy will be supplied with gas-oil. Mexican gas-oil has been extensively used by the British Navy in the past.

It is noted here that while Germany will benefit exclusively under the barter arrangement, there is no certainty that the cash obtained from Germany in the Navy deal will be spent in the United States, and as a matter of fact it is regarded as unlikely that it will be.

The Mexican Government expects to obtain heavy machinery and equipment for irrigation, agriculture and refineries from Germany under the new arrangement, light manufactured products such as typewriters, office equipment and cameras, and numerous other products, as a result of the new contracts.

It is understood that Mexican oil officials are angry over the refusal of United States machinery concerns to sell them refinery parts and that this had an influence in the making of the new contracts.

Indicative of the size of the new German deals are figures showing that from the time of the expropriation of the American and British oil companies last March 18 through November, known Mexican oil shipments were estimated at less than $9,000,000 in United States currency.

Today's $25,000,000 arrangements are understood to be on the basis of a technical price well under the world's market level of less than $1 a barrel.

Mr. Davis previously had agreed to purchase expropriated Mexican oil on the basis of a 40 per cent cash payment and 60 per cent German barter. The cash requirement has caused shipments to be much smaller than originally announced, but under the 100 per cent barter arrangement for 1939 it is expected that the full $17,000,000 worth of business will be done.

The new contracts, it is held, will permit the Mexican Government to keep oil production stable, tend to eliminate storage difficulties and supply the country with needed equipment. It was indicated that the Mexican Government had already established several million dollars worth of blocked marks in Germany by oil shipments.

Eastern States Petroleum Corp., which has purchased from 10,000 to 15,000 bbls. of Mexican oil daily since August 1, filed suit in Federal Court in New York December 9 asking $1,500,000 damages against three units of the Dutch-Shell group under the antitrust acts. The complaint alleged that Asiatic Petroleum Corp., Shell Union Oil Corp., and Anglo-Mexican Petroleum Corp. conspired to prevent Eastern States from disposing in foreign commerce of crude oil and its derivatives acquired under contract with Mexico.

The plaintiff alleges that the defendant companies used threats and coercion to induce banks not to extend credit facilities, oil brokers to refrain from selling its products and ship brokers to refuse to charter ships, and asked that the defendants be enjoined from interfering with its business. The complaint also alleges that the defendants represented falsely to the British Government and others the plaintiff's ownership of crude oil purchased in Mexico, and hampered sales of its products in Great Britain.

Eastern States Petroleum said its purchases since August 1 had averaged 10,000 bbls. daily, and that its shipments of refined products to France, England, Italy and other European countries had averaged about $1,000,000 monthly.

Henry D. Ralph, Washington correspondent of The Oil and Gas Journal, says the reports that the Mexican Government has concluded a sizeable barter arrangement for the sale of oil taken from expropriated American properties were received by the State Department with undisguised concern, although official comment was lacking. The position of the State Department is declared to be the same as taken previously, that this Government will not concern itself with any disposition the Mexican Government may make of oil to which it has title but that it will protest if it is shown that Mexico is selling oil taken from American owners without compensation.

Just what steps, if any, the State Department may take in the near future have not been disclosed. Technically, the oil seizures are still in litigation in the Mexican courts and some time ago it was intimated this Government would not make a formal protest in cases of this kind until American owners have exhausted all means of legal redress within Mexico. However, the department is not expected to let the oil matter drag on indefinitely, particularly since the recent settlement of a large group of Mexican agricultural land seizures under which Mexico agreed to make compensation in annual installments based on values of seized properties determined by a joint commission representing both governments.

Negotiation of the Mexican oil claims is realized to be a particularly ticklish job for the State Department at this time because of the administration's new Pan-American policy now come to a head at the international conference in Lima, Peru. This Government is attempting to induce the Latin American republics to resist infiltration of the economic and social ideas of European totalitarian nations and particularly to refrain from barter deals which run contrary to United States policy of equal treatment in foreign trade and removal of exchange control, special deals, and other barriers to more general international commerce.

To accomplish this the United States is seeking to convince the other nations of this hemisphere that it is not attempting to dominate their domestic or foreign policy and therefore the State Department may be inclined not to make strenuous demands on Mexico regarding the oil seizures at this time. On the other hand, it is realized that if this government takes no steps to secure compensation for owners of Mexican oil properties, other South American countries may follow Mexico's lead in confiscating American-owned property, so the State Department's Mexican policy presents something of a dilemma.

Socony and Shell Subsidiaries Plan to Drill in Egypt

Socony-Vacuum and Royal-Dutch Shell subsidiaries in Egypt are launched on an extensive exploration program and indications are that 1939 will see the drilling of perhaps 10 "geological tests." The Royal Dutch-Shell subsidiary, Anglo-Egyptian Oilfields, has succeeded in discovering one new producing area so far this year, the Ras Gharib field, which gives promise of being a larger and more productive field than the Hurgada field.

French Engineer Seeks Concession On Chiloe Island

Guillermo Dreyfus, a French engineer, has applied for permission to drill three tests on Chiloe Island, about 600 miles south of Santiago, Chile. Dreyfus recently obtained license from the Minister of Fomento to search for petroleum in Chile. Dreyfus was retained by the Minister of Fomento without the knowledge or consent of the Bureau of Mines and Petroleum.

Since 1928 the Chilean Government has spent considerable time and money attempting to develop a national source of petroleum. Up until last summer the Bureau of Mines and Petroleum had crews at work in the Magallanes area, but although the existence of petroleum there has been established, all efforts to develop a commercially profitable supply have failed.

BARCO

(Continued from Page 19)

While comparatively easy of access to what it was a few weeks and years ago, the concession is still isolated as far as outside connections are concerned. The writer flew to Cucuta in a Scadta (German) Airline plane from Barranquilla. This company is affiliated through part ownership with the Pan American Airways and serves several inland points in Colombia, including oil centers. There is one plane weekly from Barranquilla to Cucuta, which is about 300 miles inland. Forty minutes after the plane leaves the sea level landing at Barranquilla, it reaches an elevation of 14,000 feet. At this point the snow-covered peaks of Sierra Nevada de Santa Marta, rising to an elevation of 19,000 feet, are visible. The remainder of the trip for the most part is over a mountainous and thickly wooded area which is representative of the section in which the pipe line is being built.

Stringing pipe on right of way, South American Gulf Co. line

The trip here from Cucuta requires most of a day, although the distance is only 55 miles. The Cucuta railway which runs to points in Venezuela makes connections with a narrow-gauge railway operated by the Colombian company. This railway goes to Puerta Leon on the Zulia River which is crossed in a canoe. Across the river, which is the start of the concession, a car is taken to Empalme, one of the construction camps of the company. The final leg of the trip is by a narrow-gauge railway to the Petrolea camp, a distance of about 12 miles. Up until a few weeks ago it was necessary to make the trip from the river to Empalme by mule, the trip requiring several hours.

Landing Fields

The company has just completed a landing field here with one under construction at the Rio de Oro field. When both fields are completed connections between field and outside offices for both companies will be on a basis of one or two hours. At present it takes approximately 20 hours by boat and train to go from the Cucuta office to the Rio de Oro camp.

Under the Gulf management wide use was made of the narrow-gauge industrial railways as the only practical solution of a land transportation system. This is being maintained and expanded where necessary by the present owners. A road system is also being built connecting to the new well locations. The railway system connects to Puerto Reyes on the Sardinata River, through which supplies are received, and to many other operating points in the camp including all of the older wells. The new roads are being built through a heavily forested and hilly section and represent a larger expenditure than the actual drilling of the wells in many cases. The increased activity has necessitated greatly enlarged living quarters for both Colombian and foreign employes. Due to the isolation and its inaccessibility, no provision has been made for families, all housing being confined to bachelor quarters.

Most of the oil fields and pipe line equipment and supplies for this end of the pipe line project are brought in through Lake Maracaibo in Venezuela. The accompanying map shows some of the rivers used in this movement. In deliveries to the Rio de Oro field supplies are brought up the Catatumbo River and then up the Rio de Oro to the terminal. In deliveries to this point the shipments come up the Tarra River and up the Sardinata River to Point Reyes, previously mentioned. From the port the shipments are transported about 2 miles by the industrial railway to this camp.

River Connections

The South American Gulf Oil Co. is using the river connections in the movement of pipe, equipment and supplies. Camps have been established on the Sardinata and Nuevo rivers. Movement of heavy freight on these streams can be handled only during the rainy season and this fact has to be taken into consideration in the movement of pipe for the eastern end of the line.

Rainfall in this area averages approximately 150 inches yearly and the so-called dry season is confined to about three months at the start of the year.

Pipe line crossing of South American Gulf Oil Co. over cut which is dry except in rainy season

In this immediate territory road construction, which precedes the actual laying of the line, has been carried on under most adverse conditions. Rivers are out of their banks part of the time and the entire area is partially or wholly covered with water. Cuts have been made through the "monte," the designation commonly made in this part of the world for forests. Actually the "monte" is more than a forest as known in the United States. In addition to the trees there is thick tropical vegetation which is practically impenetrable. This all has to be cut out and removed before the road-making can start. Where it is in a swamp area or one covered by water most of the year it is apparent difficulties of major proportions are presented in construction and maintenance after the pipe line is laid.

In the mountainous area the problems are almost as great. The area west from the rivers gradually rises over the Andean Range, which falls to the Magdalena River on the other side. The pipe line will reach an elevation of about 5,550 feet at the highest point. The terrtain includes steep inclines, deep caverns which often are filled with rushing water following heavy rains. Part of this area is also heavily wooded.

As the work progresses camps are being established along these lines by the South American company which prepares the right of way and the Engineers, Ltd., which is laying the line. The work is under the direction of trained Colombian and foreign engineers and operators with Colombians employed in the labor camps.

The Magdalena River is used in the transportation of supplies along the center part of the line. On the west end supplies are brought through the terminal at Covenas.

Motilones Indians

No description of operations in the Barco would be complete without some mention of the Motilones Indians. These unfriendly Indians, who have added to the difficulty of Barco operations from the time of the early explorers, are still here and as hard to get along with as they ever were. Rarely seen by those they consider their enemies, they occupy remote parts of the concession and other points in the surrounding territory.

They seldom bother the long-established operations but they are a source of trouble for those who occupy the front lines of these operations, including the geological crews who are still carrying on exploratory work over wide areas in this section of the country. Those in charge of operations are inclined to discount the occasional raids of these Indians, pointing out they have other problems which are more difficult to cope with. However, they constitute at least a mental hazard to many working on projects in this section and special precautions are taken to protect men in the fields and camps.

It is still the policy of the government and the oil companies to attempt to cultivate friendly relations with this unusual tribe and no retaliatory measures are permitted when they occasionally raid supplies or shoot a few arrows. It is said the antipathy of these Indians to the white man dates back two or three centuries due to unsatisfactory relations with early traders who visited this section.

They are well advanced in agriculture and many other pursuits. They weave cloth from cotton, make baskets and are farther advanced in their standard of living than most of the isolated South American tribes. Last, but not least, they are apparently possessed of a sense of humor and derive considerable amusement from the protective precautions taken by those engaged in oil operations. While they have established communal homes which are easily visible from airplanes, they live in the "monte" for the most part and take advantage of their knowledge of the jungle in their forays upon the white man.

One of the "speeders" on narrow-gauge railway in Petrolea field used to transport employes and supplies

Operating companies expect to overcome the hostility of these Indians by the time permanent pipe line and oil-field operations are established.

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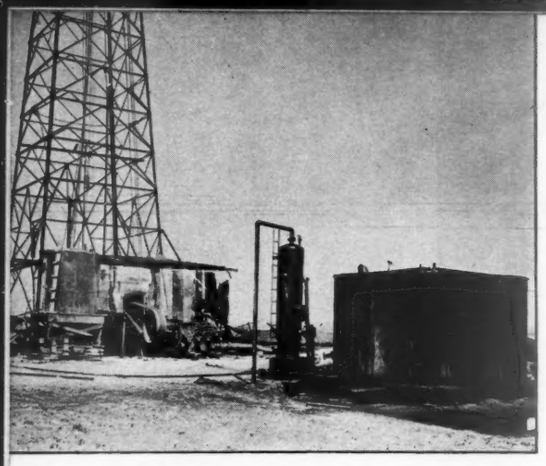


Drilling-in producer in Wasson field using closed oil system

NORTH PERMIAN POOLS BY LACK OF NEEDED

By D. H. Stormont

FORT WORTH, Tex., Dec. 12.—Development of some of the north Permian basin fields, namely Bennett, Duggan, Slaughter, Seminole, and Wasson, is being greatly hindered by lack of an adequate outlet. The Bennett field was two years and four months in obtaining an outlet. Now Humble Pipe Line Co. 12-inch line from Bennett to its station at Hobbs, N. Mex., offers the only pipe line outlet for these fields.

At a recent hearing before the Railroad Commission at Austin, Humble pointed out that its line (of 12,000 bbls. daily capacity) was now overloaded; taking 2,981 bbls. daily from Bennett, 1,141 bbls. that was trucked from the Slaughter and Duggan fields, 378 bbls. trucked from the Seminole field, and the remainder from the Wasson pool, a total of 12,100 bbls. Thus with the main outlet already overloaded, this area may soon see problems of pipe line proration, unconnected wells or a substantial reduction in well allowables.

One factor that has slowed activity in this area is its great distance from a refining center or appreciable domestic market. Nearest refinery is at Lubbock, a distance of 60 miles from Slaughter, the closest field. Output through this demand is very limited, however, as the plant is only of 500 bbls. capacity and has been operating at about 200 bbls. daily for some time. Thus, practically the fields' only outlet is the Humble line via Hobbs to the Gulf Coast, where the crudes must compete with others that have to be shipped a much shorter distance. Also, demand for this type of high-sulfur crude is definitely limited.

Low Allowables

Drillability of these fields is none too feasible under present low allowables which require several years to pay out. Average depth is around 5,000 feet and cost of wells runs from $35,000 to $45,000 completed in the tank. With daily allowables of 50 to 110 bbls., netting the producers sometimes less than 50 cents per barrel, it may be seen that the payout would be very slow. For example, in the Slaughter field cost of completing a producer runs in the neighborhood of $40,000. The daily allowable during this month is 83 bbls., crude being about 34 A.P.I. gravity with a posted price of 83 cents per barrel. The producer must pay the trucking cost either to the Humble station or to Lubbock so he nets only about 50 cents. In the Wasson and Bennett fields the situation is not quite so disheartening since both have pipe line outlets and the crude does not have to be trucked.

Spacing rules and proration methods adopted in some of the fields and being studied in those not yet having them are designed to discourage concentrated drilling, and to keep the number of the wells that must be drilled at this time at a minimum. The result has been that practically the only drilling done was in the nature of forced offsets or to meet lease expirations. Bennett, discovered in April, 1936, had only six wells at the first of this year. Duggan, discovered in September, 1936, had only two producers and Seminole, found early in 1937, only four wells. Slaughter, another 1937 discovery, had only three producers at the start of this year; but in Wasson, the basin's major 1937 discovery, development was more rapid and at the first of 1938 there were 26 wells. As shown in the accompanying table, only 162 wells have been drilled so far this year in all these fields, yet over 38,000 acres of semiproven area have been added.

Activity in these fields has shown a decided increase during the past few months. While the number of operations at the present time is only 33 drilling rigs, coming months will undoubtedly show a steady increase as forced offsets require additional drilling or if the fields should gain an additional outlet. Nine new locations were staked last week, all in Yoakum County.

Wasson Extensions

In the Wasson field some 30,000 acres have been added this year through extensions, the field now covering approximately 50,000 semiproven acres, contoured on top of the lime, and having at least 300 feet of closure. It contains about 130 wells, of which over 100 have been drilled this year. Thus it may be seen that if the 40-acre spacing pattern now used is followed it will require over 1,100 wells to be drilled. If future developments prove 20-acre spacing would not result in excessive drilling, then over 2,300 wells will be required to drill up the present semiproven area. Although estimates vary as to the ultimate recovery, some operators estimate an ultimate yield of around 10,000 bbls. per acre.

Cross sections indicate Wasson is a common reservoir as in general all samples show a fairly constant oil-gas datum extending across the field. A gas cap exists on the west side of the field but it is not known definitely whether the field will be a gas-drive, water-drive or combination of both. In the gas-cap area a hard lime section at the gas-oil contact allows packers to be set, thereby reducing the gas-oil ratio and saving the gas for use in gas-lift operations after the wells have ceased flowing. Core recoveries run only in the neighborhood of 40 per cent so the point at which packers are set is usually determined by study of samples, drilling time logs or electrical surveys. In the few wells that have been observed, there was a noticeable tendency for the bottom-hole pressure to drop comparatively fast.

At two hearings held in an attempt to adopt field rules operators were unable to agree on well-spacing and method of allocation. Regulations favored by a majority called for 40-acre spacing and proration units with 60 per cent of the allowable distributed according to acreage and 40 per cent to acreage times average potential. This plan was offered as a means of providing wide spacing and discouraging operators from drilling more than one well to 40 acres. The rules proposed constituted, in the minds of their advocates, a "density order." This term was applied because while the rules called for one well to 40 acres, the method of fixing 40-acre units was highly flexible and permitted them to be twice as long as they were wide. They contended this method was best as it would tend to discourage concentrated drilling, although wells might be spaced as close as 330 feet from lease lines.

Argument on Allocation

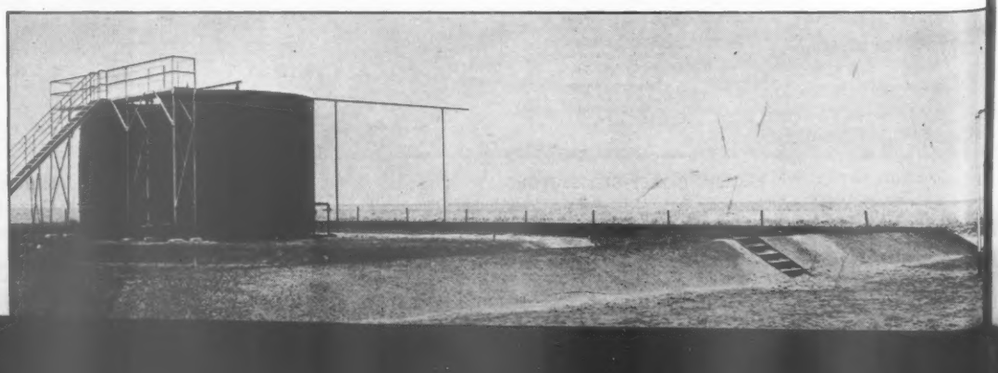
If a 50-50 allocation plan were used, they argued, it made profitable the drilling of a second well on a 40-acre tract. Two wells on a 40-acre tract would get an allowance equal to 75 per cent of that assigned to two wells each of which were on a full 40-acre unit. Thus the field would have in reality 20-acre proration units and spacing and they did not feel it should be drilled to this density at a time when there was a very limited demand for the field's production.

AREA PRODUCTION AND OPERATIONS

	Bennett	Duggan	Seminole	Slaughter	Wasson
Present semiproven area, acres	2,500	4,000	3,500	10,000	51,000
Proven area January 1, 1938, acres	1,600	2,000	2,500	7,000	18,000
1937 production, bbls.	113,018	34,040	27,461	10,275	166,803
1938 production, bbls.*	538,973	91,909	95,616	86,015	1,262,567
Number of producing wells	45	7	9	13	130
Producers completed in 1937	4	1	4	3	26
Producers completed in 1938	39	5	5	10	104
Average depth of pay, feet	5,200	5,100	5,032	4,950	5,000
Producing formation	Permian lime	Blaine lime Permian	Permian lime	Blaine lime Permian	Permian lime
Type structure	Local structure on reg'l anticline	Nose	Anticline	Stratigraphic accum. or nose	Anticline
Date of discovery	April, 1936	Sept., 1936	Jan., 1937	April, 1937	June, 1937

*Railroad Commission figures for first seven months.

Wooden lease tanks and separator in Wasson field

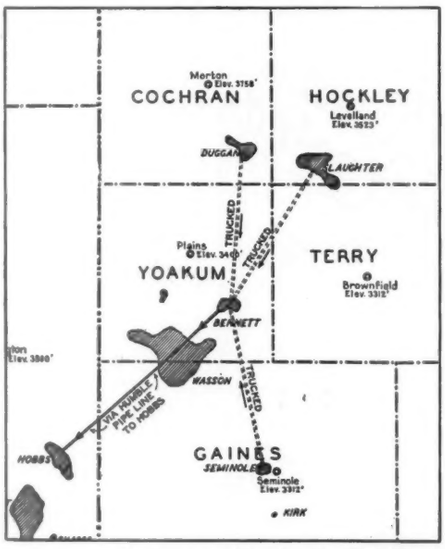


HINDERED OUTLETS

Lease tanks in Bennett field, southern Yoakum County

In the nearby Bennett field a 20-acre proration unit is being used with allocation distributed on a 50-50 basis to acreage and acreage times potential. If later development should prove the Bennett and Wasson fields to be one common reservoir the problem of different spacing patterns and proration units may arise. Bennett now has about 45 producers, all flowing, with a total potential of over 64,000 bbls. daily. Allowables for these wells vary from around 57 to 117 bbls., total allowable for the field during this month being 3,802 bbls. daily. Of the field's total daily allowable, 1,916 bbls. is distributed to potential (the potential factor for this month being about .0318) and 1,886 bbls. to acreage, or an acreage allowance of 46 bbls. per well.

Development has been fairly uniform in this field, wells being drilled 440 feet from lease or boundary lines on all quarter-section or larger tracts, with no two wells spaced closer than 770



Southwestern Mapping Co., Fort Worth

Locations of five north Permian basin fields and their main outlet

feet. With this pattern eight wells are drilled to a quarter-section, three on each side but none in the center, so that a high-pressure area is maintained in the middle of the tract to drive the oil toward the wells. An alternate 10-acre spacing or so-called "staggered 330-foot" location is used on the smaller tracts.

In connection with the two fields being linked, J. E. Mabee No. 1 Willard in Section 741, 1¼ miles to the southeast of Bennett came in flowing 320 bbls. daily, natural. Drilled in with oil, the extension well was reported to have encountered broken saturated lime from 5,040 to 5,227 feet, total depth and at last reports the producer was being acidized. Thus the strip between the two fields is now reduced to less than four miles and geologists, generally, believe the two pools will eventually be joined.

In the Slaughter field of Hockley County development likewise has been retarded by lack of outlets. It was discovered in March, 1937, and its only outlet is by truck, some going to the Humble station at Bennett and some trucked to Lubbock. Only three producers were drilled during 1937 and so far this year only nine more have been added, yet the field is credited with having a semiproven area of around 10,000 acres. Field allocation is distributed on the basis of 83 bbls. per well, there being only one producer not capable of flowing its allowable. Initial production of wells in this field varies from around 175 to 910 bbls. per day.

Average Depth

Average depth of wells is around 5,000 feet, production being obtained from the Blaine lime which averages 50 to 100 feet in thickness. The producing structure is a southward-dipping anticline with the sand evidently thickening to the north. The pay has both low permeability and porosity so that ultimate recoveries advanced range only in the neighborhood of 7,000 bbls. per acre. Bottom-hole pressure is about 1,800 pounds at a datum of —1,500 feet. Gas is believed to be the main driving energy.

Temporary spacing regulations have been followed since last May, these providing that no well could be drilled nearer than 400 feet to any lease or legal subdivision line or nearer than 1,240 feet to any drilling or completed well. The tracts range in size from 160 to 200 acres and average 177.1 acres. This makes uniform spacing of wells difficult.

Well Spacing

One suggested well spacing was 440 feet from lease lines and 880 feet between wells with the field to be prorated on a 50 per cent acreage and 50 per cent potential basis with a 35.4-acre well spacing. The majority of operators, however, objected to this as it made possible the drilling of a second well on a 35.4-acre tract and the field would be drilled to a density of 17.7-acre spacing. Also the plan was too rigid in its spacing requirement to promote uniform well spacing on a legal subdivision.

Field rules for the Wasson pool were adopted December 2 in a special order by the Railroad Commission which limited drilling to 330 feet from property lines and 770 feet from another well. Twenty-acre proration units were prescribed with the field allowable allocated one-half on acreage and one-half on average unit potential. The order also provided that at the election of the operator the well density may be kept to one well to 40 acres, in which event the 40-acre tract would receive twice the acreage allowable allocated to a 20-acre unit. A gas-oil ratio limit of 5,000 feet per barrel was prescribed. Method of determining 24-hour potential provided that it should be taken through tubing not larger than 2½-inch and based on the last three hours of a six-hour flow.

Activity in the Seminole field of central Gaines County has shown a slight increase recently after being quiet for several months. Only four wells were completed last year and five were added this year, only one of which was recent. Three rigs are now drilling in the pool or seeking to extend its productive limits estimated at 3,500 acres. One important test 3½ miles to the north is Adams & Bradley No. 1 Crain, Section 216, G.W.T. Survey. This test topped the Yates sand at 3,280 feet, or about level with Amerada Petroleum Corp. No. 1 Robertson, which extended the pool 1 mile west. The test is drilling below 3,450 feet with the top of the pay expected at around 5,000 feet.

Low Potentials

The majority of the producers completed in Seminole have low potentials, only two of the nine having potentials over 300 bbls. daily. Production is allocated on a per-well basis, 59 bbls. daily this month. Two producers, however, are prorated to 30 and 32 bbls. each due to their high gas-oil ratios, in the direct proportion to which they exceed the permissible gas ratio of 2,000 feet daily. The field is being developed under state-wide regulations.

The Duggan field, discovered in September, 1936, is likewise being regulated by state-wide rulings since no field rulings have been adopted. Production from this five-well pool is obtained at an average depth of 5,100 feet, initial potentials ranging from 174 to 611 bbls. daily. Allowables are distributed on a per-well basis, 74 bls. daily for this month. The Duggan producing structure is believed to be a flat nose with a stratigraphic oil trap, porosity evidently increasing down nose. To date the pay section averages about 50 feet of porous dolomitic limestone of Blaine age.

Unloading crude trucked from Slaughter field at Humble Bennett station

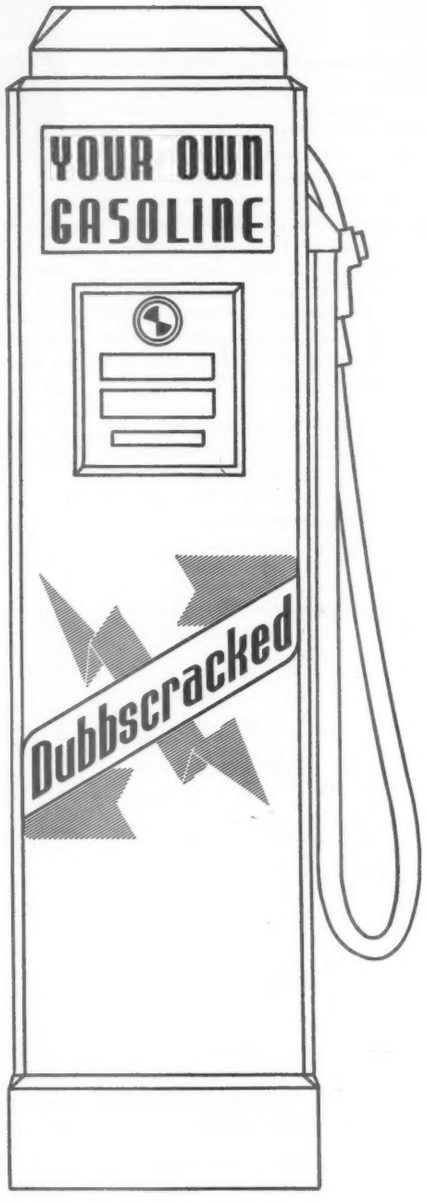
Nothing is too good for your customers if you want their business

They want the best kind of gasoline and they deserve it

That's Dubbscracked gasoline

If you have Dubbscracked gasoline to sell it's wise to tell your customers it *is* Dubbscracked—in sign language

They'll try it and they'll like it and they'll come back for more



Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

ENGINEERING and OPERATING

In This Issue

CRUDE OIL PRODUCTION REQUIRES EFFICIENT LIFTING METHODS
By S. F. Shaw ..... *Page 38*

Factors to be considered in the selection of lifting methods for bringing various quantities of oil to the surface are discussed with consideration given to the influence of underground conditions as well as to the outstanding features of different types of equipment for handling the variety of situations encountered in producing oil.

RECORDS BROKEN BY TEXAS CO. FOR SETTING 9⅝-INCH CASING
By Neil Williams ..... *Page 42*

Running and cementing of 11,631 feet of casing in a well located in the Coastal Louisiana area has been accomplished without trouble, thus making it possible to drill the well to record-breaking depths.

FLUID-LEVEL INDICATOR IS USEFUL IN EAST TEXAS FIELD OPERATIONS
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The growing importance of bottom-hole measurements in connection with the production of oil in the world's largest oil field is discussed with special reference to the use of an instrument which indicates the depth of fluid levels by the sound wave reflection method.

FRACTIONATING COMPLEX MIXTURES—APPLICATION AND SUMMARY
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This article concludes a series which comprise the first comprehensive discussion of the fractionation of complex mixtures ever published. In reviewing the subject, comment is made on the general usefulness of the methods previously discussed in the series.

SAFETY—NECESSARY ON THRIBBLE BOARD ..... *Page 48*

Practices contributing to the protection of the men working on a thribble board are mentioned with special comment in regard to certain measures which should be widely adopted in rotary drilling.

DEEPER COTTON VALLEY DRILLING BRINGS ADDED DIFFICULTIES *Page 49*

New types of drilling equipment and methods have been employed in a North Louisiana field which is one of the deepest areas being developed this year. Mud control methods and procedures followed in coming out of the hole are described as well as other practices followed in the drilling operations in this locality.

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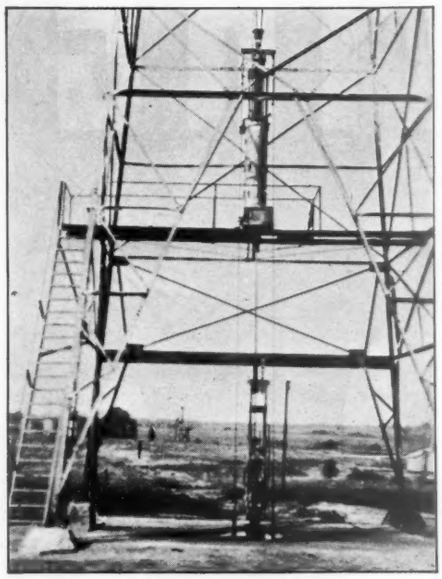


Pneumatic head, Van, Texas

Crude Production & Efficient Lifting

By S. F. SHAW
Consulting Engineer

Many factors enter into the choice of a method for lifting oil. These factors largely concern the conditions in the well, the adaptability of the method to the well conditions, and the requirements imposed by proration schedules. Factors that have considerable influence on the method to be employed include depth of well, condition of the hole, character of the producing formation, character and quantity of the liquid to be lifted, quantity of gas present with the oil, and reservoir and flowing pressures.

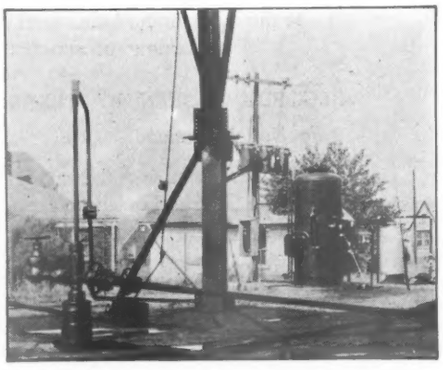
In many respects the depth of the well is the most important factor necessary to consider, and governs to a considerable extent the method that must be employed. Depth is a condition that cannot be changed, as can some of the other conditions. The deeper the well, other conditions being the same, the greater is the energy required to lift a barrel of oil. The application of the power medium to a given quantity of work to be performed on the surface, where everything is accessible, is very different from applying power to the lifting of oil from 1 to 3 miles below the surface where the power has to be applied through a comparatively small hole.

Fortunately for the operator, the reservoir usually contains sufficient energy stored in the form of compressed gas or a water-drive when the reservoir is penetrated to automatically lift a considerable portion of the oil. In the course of time this energy is largely exhausted in lifting the oil that is produced in the earlier stages, and eventually a time comes when artificial methods must be applied to the lifting of the remainder of the recoverable reserves. The inefficient use of power in the early life arises from the fact that the oil usually contains gas dissolved in the oil in a quantity that is many times that required for lifting the oil under the early conditions, but since the gas is dissolved in the oil, it cannot be removed and, therefore, must be produced with the oil. For instance, the oil and gas in the Fitts field, Oklahoma, was initially under a pressure of about 1,850 pounds per square inch and under this condition there was required less than 10 cubic feet of gas to lift 1 bbl. of oil. The quantity of gas initially dissolved in the oil in this field amounted to about 450 cubic feet per barrel, and there was no possible way to reduce this quantity below 450 cubic feet for every barrel that was removed. This was very inefficient use of energy but unavoidable.

As depth increases, the use of methods suitable in shallow wells becomes increasingly difficult, and these earlier-day methods must be improved or discarded in favor of methods that can handle the production.

The condition of the hole is an important matter when it comes to the consideration of lifting the oil and to applying a method suitable for that purpose. Small holes permit the lifting of large quantities, even from great depths when the reservoir is under high pressure and when there is sufficient gas present to lift the oil naturally. But when artificial methods are to be applied, especially in a deep well, a small diameter hole is a source of much trouble. A lifting method cannot be nearly as easily applied in a small and deep hole as in a well of larger diameter, nor can repair work, such as finishing or reconditioning the well, be done as readily as through a large casing.

The consumption of gas for lifting a barrel of oil through a small hole is greater than in a large hole, whether on natural flow or on gas-lift. However, this point is not important during the early natural flow, since there is usually a large excess of gas present over that required for lifting purposes, at which time inefficiencies are not noticed; moreover, conditions often exist in consequence of which inefficiencies cannot be avoided.

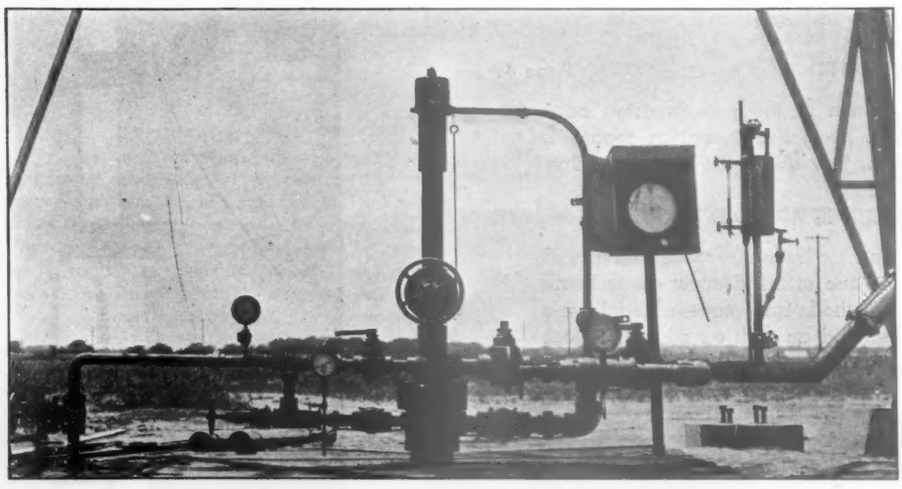


Hydraulic pump-gas lift combination method, Oklahoma City field

The condition of the hole at the point where the reservoir is penetrated has an important bearing on the ability of the well to produce, both initially and in later years. Uren has made it clear that a large hole will allow the oil to enter the well with less expenditure of energy than a small hole. However, the tendency now is to complete deep wells with small casings from the surface to, and through, the sand on the score of economy, and much can be said in favor of this effort to reduce capital expenditures when wells are so greatly restricted, and yet the future possibilities of the well are jeopardized when this step is taken. Enough wells of this character have been drilled in the past few years to bring this point to the fore when it becomes necessary to produce these wells artificially at a later period.

The completion of a well with or without a liner; the use of gravel packing; perforated casing, etc., all have a bearing on the condition of the hole with respect to the method of lifting to be employed.

Reservoir formations differ in character. The two more usual types of reservoir rocks are sand and porous limestone, with gradations between, or with combinations of the two. To a small extent, porous serpentine, and sandy shale may form the reservoir rock. These formations may be thick or



Plunger lift installed at well in Keokuk Falls field, Oklahoma

Requires Methods

Continuous gas-lift hook-up, Corpus Christi pool, Texas

thin, and they may be tight or loose, all of which conditions have a large bearing on the method of lifting to be employed.

As a rule, a thick formation can produce a greater daily quantity of oil than a thin formation, and it contains a greater reserve of oil, therefore can continue furnishing a larger daily rate than a thin formation.

Oil will not enter a well in as great a daily volume through a tight sand as through a loose, open, and highly permeable formation, and this will influence the choice of the method to be employed.

Important Factors

In a limestone formation there is more likelihood of hydrogen sulfide being present than in a sand formation. Some methods suitable for handling oil and gas free from hydrogen sulfide are less suitable when the gas contains hydrogen sulfide, especially after water encroachment has started, and more especially if any oxygen is present in the gas.

The liquid being produced may differ greatly in character and in quantity. The oil may be light and flow readily, or it may be heavy and viscous and enter the well at a slow rate. Depth will influence the character of the fluid to a considerable extent, since higher temperatures exist at greater depths which will influence the fluidity of the oil. Water may or may not be present with the oil and this will usually have a decided bearing on the method to be employed.

The quantity of liquid that can be produced will influence the manner of lifting the oil. To some extent this influence may be modified by proration schedules, particularly if the liquid be pipe-line oil, but in fields that must produce large quantities of water in order to lift the desired quantity of oil, the method must be capable of handling large quantities of liquid at a reasonable cost if it is to be considered at all.

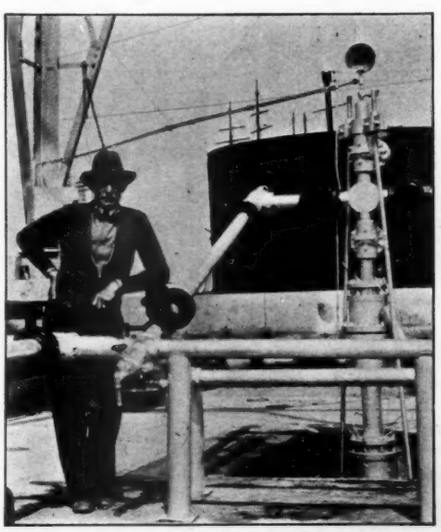
The quantity of gas present will have a bearing on the production method employed. In the early stages of many fields the quantity of gas present is so large that no other method than that of natural flow can be employed, nor would any other method be employed if it could be, because of the lower cost of natural flow. After natural flow ceases, there may yet be sufficient gas present to prevent the use of methods seriously affected by gassy oil. Nearly all methods employing displacement cylinders through which the gassy oil must pass, are seriously handicapped when this character of oil is present.

The importance of pressures in connection with the lifting of oil is revealed by the attention now being given to the study of this subject. Reservoir pressures have an important bearing on the energy present in the formation that is available for moving the oil to the well and for lifting the oil to the surface. Flowing pressures at the bottom of the well have a bearing on the quantity of oil that can be lifted after the oil once enters the well, but flowing pressures must inevitably be lower than reservoir pressures or else there can be no flow into the well.

The study of reservoir pressures reveals to some extent the decline in the potentiality of the well in succeeding stages of the life of the well. Other important inferences are derived from the study of underground pressures, but to derive the maximum benefits from this study there must be systematic recording and charting of these pressures. In this way not only may the operator be able to determine within reasonable limits the time when natural flow must be succeeded by artificial methods, but also he may more closely formulate an idea as to the method that will be more suitable for lifting the oil when artificial methods become necessary.

At the present time the methods employed to greatest extent for lifting oil are as follows:

1. Natural flow.
2. Gas-lift; continuous, combination and intermittent.
3. Centrifugal pumps.
4. Hydraulic pumps.
5. Sucker-rod pumps.
   - A. Individual units.
     - (*a*) Beam pumps or similar arrangement.
     - (*b*) Pneumatic heads.
     - (*c*) Air or steam heads.
   - B. Central powers.
     - (*a*) Band wheels.
     - (*b*) Geared pumping units.



Natural flow hook-up, Wilmington field, in the Long Beach area, California

When the reservoir is penetrated initially, it is usual for the well to flow naturally. This is more likely to happen in deep wells than in shallow wells, inasmuch as deep wells usually produce oil of higher gravity which is easier to lift than heavy oil; the pressure increase with depth not only enables a greater volume of gas to be dissolved in a barrel of oil, but also results in the gas possessing greater energy per cubic foot due to the increased pressure; moreover, the temperature of the oil increases with depth, enabling the oil to be lifted with greater ease. These four combined factors result in the increase of available energy being greater than the increase in work necessary to lift a barrel of oil from the greater depth. All of this indicates the greater likelihood of oil flowing naturally in deep wells than in shallow wells.

The quantity of gas required to lift a barrel of oil in the Rodessa pool, Louisiana; the Moore pool, Oklahoma, and the Kettleman Hills pool, California, are given in Table 1. It may be observed in this table that at the initial pressures in the Rodessa and Moore fields, no gas at all is required to lift a barrel of oil. Yet there is dissolved in a barrel of oil several hundred cubic feet of gas which must issue with the oil even though none at all is required for lifting purposes. Not until pressures are reduced to 600 or 700 pounds is it necessary to employ as much gas for lifting purposes as is dissolved in the oil under initial pressures. Nevertheless, there is no means known whereby the gas can be removed from the oil and held back in the reservoir.

TABLE 1—APPROXIMATE QUANTITY OF OUTPUT GAS REQUIRED TO LIFT A BARREL OF OIL AT MAXIMUM CAPACITY WITH A GIVEN FLOWING PRESSURE IN THE RODESSA, MOORE AND KETTLEMAN HILLS POOLS

Lbs. flowing pressure—	Cu. ft. required to lift 1 bbl. of oil		
	Rodessa (Depth, 6,000 ft.)	Moore (Depth, 7,300 ft.)	Kettleman Hills (Depth, 9,000 ft.)
3,000+*	0	0	9
2,840*	0	0	....
2,670*	0	0	....
2,500	0	20	65
2,000	15	75	130
1,500	90	160	250
1,000	260	370	540
900	310	460	640
800	390	540	760
700	490	670	920
600	610	860	1,130
500	820	1,080	1,400
400	1,080	1,390	1,940
300	1,730	2,060	2,840
200	2,710	3,440	4,500
100	7,470	7,780	9,100

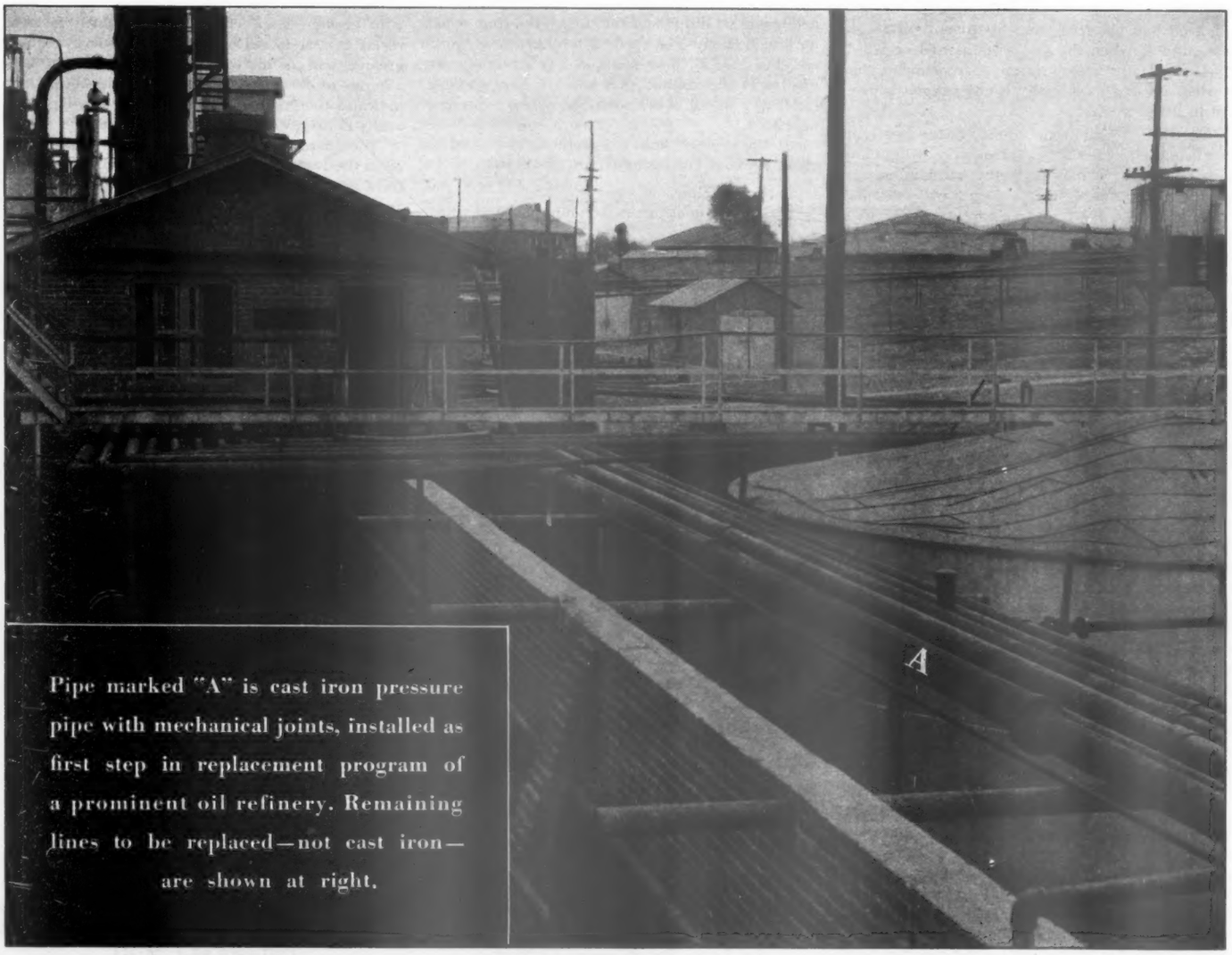
*Initial reservoir pressure.

As long as the well flows naturally at a satisfactory rate, this method of producing the oil is probably less expensive than any other method that can be employed. Not only is the operating

(Continued on Page 51)

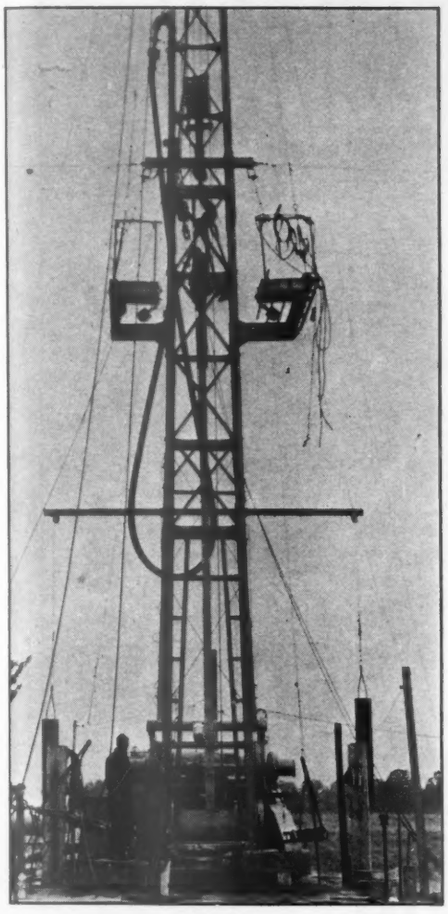
THEY WANTED LONGER LIFE– they replaced with cast iron pipe

Known long life and native ability to resist corrosion make cast iron pipe a contributing factor in lowest plant maintenance per barrel of crude. The results of replacement with cast iron pipe have demonstrated this in many refineries. Cost per year of service decreases. Interference with production ceases to be a problem. Cast iron pressure pipe is available in bell-and-spigot, plain and threaded ends, and flanged types, or with bottle-tight mechanical joints, in diameters from 1¼ to 84 inches. For further information write to The Cast Iron Pipe Research Association, Thos. F. Wolfe, Research Engineer, 1015 Peoples Gas Building, Chicago, Illinois.



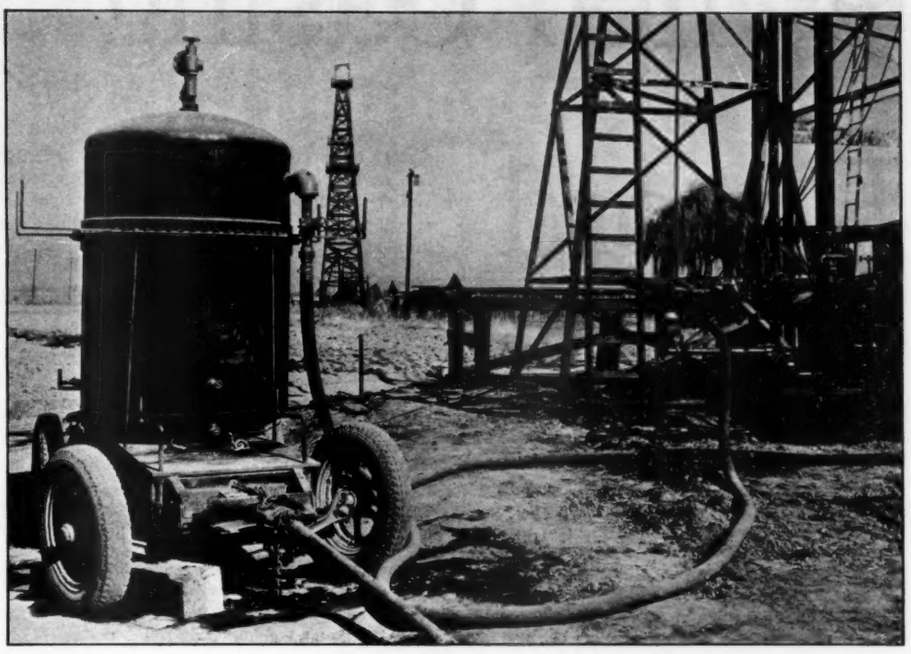
Pipe marked "A" is cast iron pressure pipe with mechanical joints, installed as first step in replacement program of a prominent oil refinery. Remaining lines to be replaced—not cast iron—are shown at right.

OPERATING IDEAS



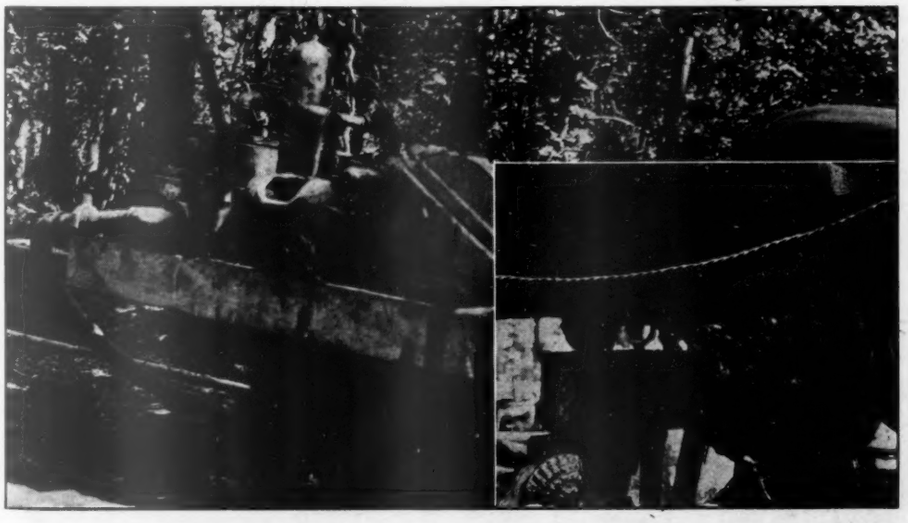
Counterbalance Guides

Mast rigs have caused drilling crews to change their styles to a certain extent but most of the masts provide means for hanging the break-out tongs. Getting the counterbalances out of the way has been a problem which the crew on the above rig has solved. A cross member was bolted to the mast and pulleys were attached for guiding the lines on the ends. This puts the counterbalances outside; working of the tongs is not affected.



Portable Calibrator Checks Oil Well Meters

A California operator has a portable calibrator for checking the accuracy of meters used at producing wells. The unit is mounted on a four-wheel trailer which can be towed from one location to another by the pumper's car. Flexible hose is used between the unit and the meter.



Slush Pump Driven by Rear Axle of Truck

A drilling contractor operating a small rotary rig in the Illinois basin has an unusual way of driving his rotary pump. He removes a rear wheel of a 1½-ton truck and places a sprocket in the place of the wheel; by using roller chain, he drives his power mud pump. This gives him the advantage of four-speed transmission for holding desired pressures.

Air Circulation

At this pipe line station, cooling air for the electric motors is brought in from the outside by large ducts entering the motor housing at the top. When the units are shut down, smaller lines entering the main ducts at the top bring air from the blower, in the rear, to purge the entire air circulation system of any gases to avoid the danger of explosion.

9⅝-inch Casing Record

By NEIL WILLIAMS

The recent successful setting and cementing of 11,616 feet of 9⅝-inch O.D. casing by the Texas Co. in its No. 2 State at Horseshoe Bayou, St. Mary Parish, coastal Louisiana, marks another advance for deeper exploration. This is by far the longest string of pipe, larger than 7-inch, ever run, and its setting demonstrates the ability to handle large sized pipe at great depths. With casing of this size at these levels, operators are prepared to carry hole more easily to new record depths.

Seated at 11,631 feet, the casing in this test is below the producing sand in which two other wells, No. 1 State and No. 1 St. Mary Parish Land Co., have been completed in the field. The first well, with 7⅝-inch casing at 10,975 feet, is producing from perforations in the casing at 10,863-73 feet. Originally, it was drilled to a total depth of 12,261 feet. The other well, drilled to 11,067 feet, has 7⅝-inch casing set at 11,062 feet, which is perforated at 10,900-09 feet.

Running and cementing casing in this test was accomplished without trouble. Only on two occasions during the entire job did the pipe show signs of sticking. The first time was at 5,404 feet while casing was being filled; the second at 8,300 feet when running of pipe was stopped to break circulation. In each instance the pipe broke freely when weight was applied, although on the second occasion it took 23 points on the indicator to get loose.

The setting consisted of the following:

	Total feet
9⅝-inch guide shoe	1.55
1 joint 9⅝-inch threaded and collar casing	43.40
9⅝-inch float	1.35
1 joint 9⅝-inch threaded and collar casing	39.95
9⅝-inch float	1.35
81 joints 9⅝-inch threaded and collar casing	3,416.70
200 joints 9⅝-inch extreme line casing	8,111.71
Total	11,616.01

Weight of the casing was 43.50 pounds per foot, making a total weight for the string of over 500,000 pounds. Significant is the fact that the well is a water-located operation, drilled with a submersible drilling barge, which proves again the ability of such equipment to handle as great, if not greater loads, as land facilities.

The casing was run in 12¼-inch hole, which sized hole was drilled from the bottom of the surface casing, 13⅜-inch O.D., 54.50-pound pipe set and cemented at 1,859 feet. Bottom was 11,644 feet, making a total of 9,785 feet of open hole. Despite the amount of open, large sized hole, no difficulty was experienced in holding up the walls. This is reflected in the rapid time made in drilling, only 30 days' drilling time being required down to 10,011 feet.

Before running the casing, the drilling rig was thoroughly checked for strength, and necessary repairs made. A 600-ton crown block and a 500-ton traveling block were installed to replace lighter blocks which had been used in drilling, and 12 lines were strung with new 1⅛-inch drill line. A 12½-inch rock bit then was run to bottom and the drilling mud conditioned. The final test on the drilling mud preparatory to running casing showed the following:

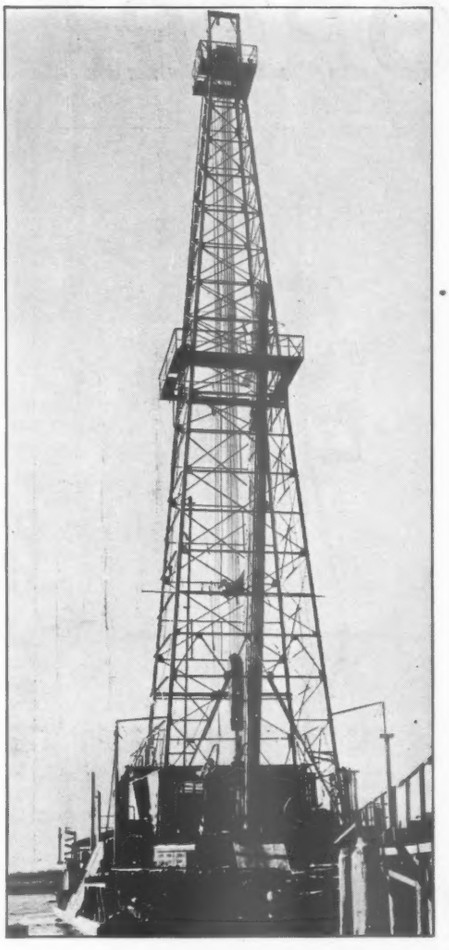
Weight, pounds per gallon	11.1
Viscosity (500 cc. in and 500 cc. out), seconds	40
Viscosity (A.P.I.), seconds	51
Viscosity (Stormer), cps.	23
Gel:	
Initial, grms.	18
Set 10 minutes, grms.	70
pH	7⁺
Sand, per cent	2
Clear water in 20 cc. mud and 80 cc. water after setting one-half hour	none
Salt, r.p.m.	3,150
Temperature at flow line, °F.	123
Solids, per cent by weight	37

Circulation was discontinued and laying down of drill pipe started at 2 a.m., November 9. At 6:30 p.m. the same day, all drill pipe was laid down, and casing was started in the hole. Total time for running and cementing the casing, using 1,500 sacks of cement, was 23 hours and 21 minutes. This was consumed as follows:

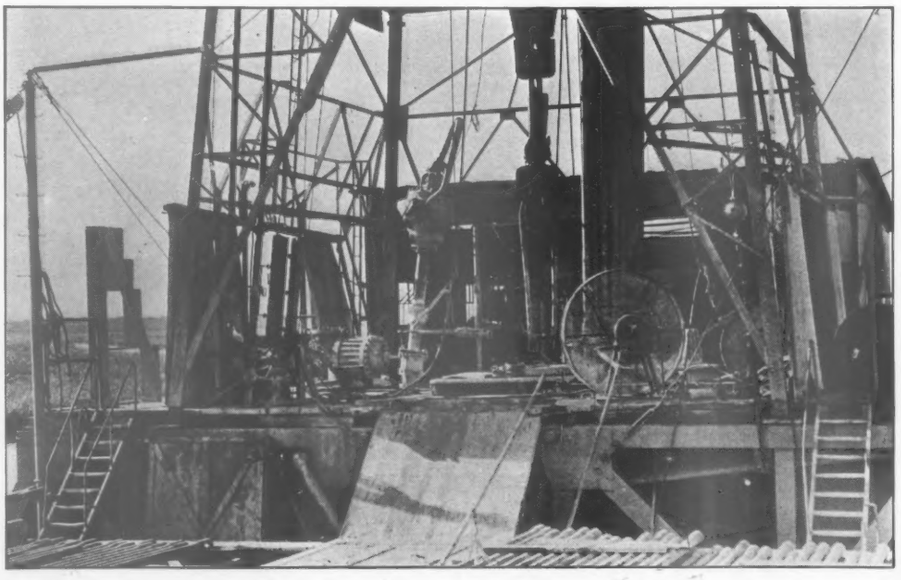
Time required for running casing	20 hrs. 25 min.
Time required for mixing 1,500 sacks of cement	32 min.
Time required for pumping down plugs	53 min.
Total	23 hrs. 21 min.

At 8,300 feet, running of pipe was stopped briefly to break circulation; this required 1,150 pounds pressure. At 10,400 feet, 330 additional feet of casing was filled with mud. The remaining casing was run without addition of mud to the string, making the total amount of dry casing about 3,000 feet. The casing was landed on bottom at 2:55 p.m., November 10. With about 142,000 pounds held on the derrick and the remainder of the weight on casing spider, the 3,000 feet of dry casing was filled. Circulation was broken at 4:05 o'clock after 1,800 pounds of pressure had been built up. Pumping of mud was continued 18 minutes, during which time circulation pressure dropped to 1,200 pounds.

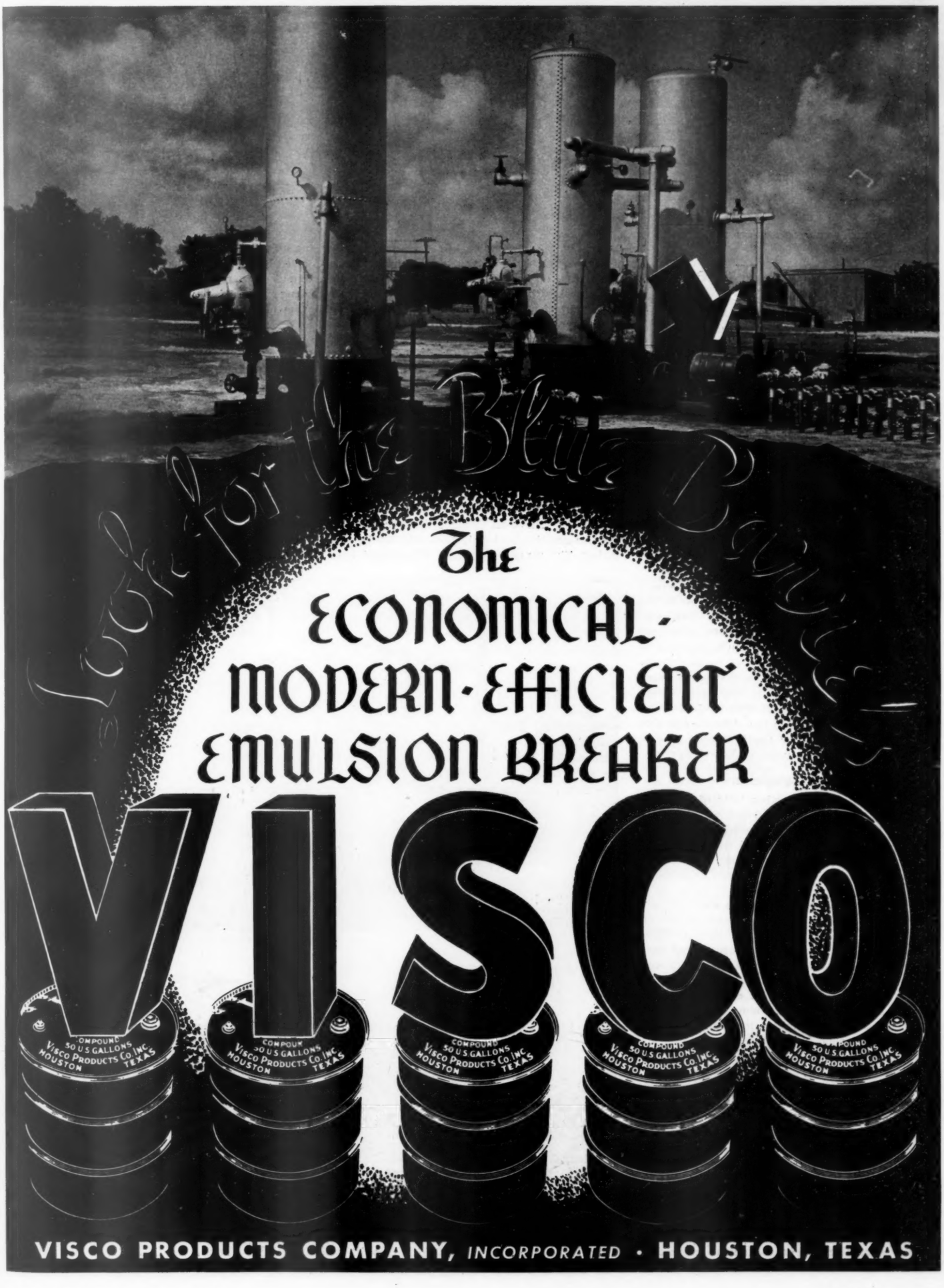
Mixing of cement was started at 4:23 o'clock with two cement trucks pumping. At 4:55 o'clock, the 1,500 sacks of cement were mixed, and three minutes later pumping of plugs down the hole began. Pressure at the start of the plugs was 900 pounds, this dropping to 825 pounds after 17 minutes of pumping. Cement started out of the casing at 5:25 o'clock with circulation pressure at 800 pounds. Pumping was continued until 5:51 o'clock, when a maximum pressure of 2,300 pounds had been built up.



Drilling barge "Kelly" at the Texas Co. No. 2 State, Horseshoe Bayou



Derrick floor of drilling barge after setting and cementing record string of 9⅝-inch casing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Set-up for obtaining fluid-level reading by sound wave reflection method

FLUID-LEVEL INDICATOR USEFUL IN EAST TEXAS

By George Weber

Increased use of artificial lift in the East Texas field has introduced a number of new methods for testing and equipping wells in which natural flow has ceased. New methods are being adopted for more efficient testing of wells both in the initial and advanced stages of artificial lift.

In order to determine the best procedure for flowing a well, it is of considerable importance that a study be made of conditions in each individual well. Knowledge of fluid levels, bottom-hole pressure, build up and other characteristics are needed in fitting the well for the best results in secondary production. Also, as wells continue on the pump or gas lift, it is important that periodic tests be run to appraise their performance and to find what improvements, if any, can be made in their production.

The large amount of bottom-hole pressure measurement work which will be needed in the future comprises an increasing share of the production engineer's work in the field. It is indicated that much of this work will be handled by a new method recently introduced in East Texas.

The new procedure employs the use of sound wave reflections to determine the depth of the fluid level in the well tested. This method, which has found wide application in California and Kansas, is being offered for the first time in East Texas under the trade name of Echo-Meter.

Test Equipment

Equipment for conducting tests of this type consists mainly of a heavy, 2-inch well-head connection incorporating a gun and a sensative microphone, an amplifier equipped with tuning and filtering provisions, and a pen recorder which converts the electrical impulses directly to a record on a moving paper ribbon.

Preparation for a test requires about 15 minutes. The well-head connection, made to the annular space between casing and tubing, allows pumping or gas lift to be continued during tests. The gun, which fires a blank cartridge, is connected to the head between the sound wave detector and the well. A quick opening valve installed ahead of the microphone remains closed at the instant the gun is fired, allowing only enough of the shot wave to enter the detector and surge chamber section, to give a record of the shot point. The full force of the discharge is conducted directly down the well, between casing and tubing.

The valve, actuated by the same operation which discharges the blank shot, is opened immediately after the full force of the front wave enters the well, and the sound reflections following the initial charge are transmitted directly to the microphone. These minute impulses picked up by the microphone are conducted by a shielded cable to the amplifier and the recording device mounted in the test car.

As the shot impulse travels downward through the casing, small reflected waves from tubing collars, tubing hanger, liner top, valves and any other partial obstructions above the fluid level, are picked up by the microphone. As the sound wave strikes the fluid surface it is almost totally reflected, affording clear indication of fluid level on the record. Reflections from subsequent sound waves, rebounding downward from the well head, can also be recorded, providing a good check on the required data.

Since the speed of sound varies in different wells, depending on the density and characteristics of the gas medium in the column, depth determinations are greatly simplified by using the tubing collar reflections for depth calibrations. The average tubing length is derived from well records. By direct measurement on the ribbon, of a length including a certain number of tubing collar reflections, the basis for the calculations is established. The total distance between the shot impulse and the fluid reflection can then be read in feet. The range of error in this method averages as low as 2½ feet per thousand. Accuracy is aided by several checks of different tubing collar impulse groups, and also by checks of valves, hangers or liner tops, whose correct depth is known.

Tubing Collar Reflections

The tubing collar reflections do not usually show up immediately after the shot, due to overload, but sufficient reflections from deeper collars are available to accurately calibrate the depths desired. Generally, the smaller the annular space between casing and tubing, the less effective are the reflections. The pressure wave in the gas column gives some drift in the record, but not enough to obscure the needed points.

Difficulty may be encountered in getting a clear fluid level reading if the fluid in the well is capped with foam. It is believed that the introduction of a small amount of gasoline into the

(Continued on Page 50)

Fluid-level detector in use on a gas-lift well in the East Texas field. The gun is shot by remote control from the rod on the valve by operators conducting the test

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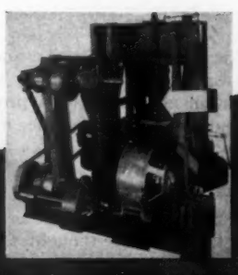

Fractionating Complex Mixtures

General Applications and Summary

By W. L. NELSON

In this, the last of 10 of a series of papers, the general usefulness of the methods described will be discussed. To our knowledge this series of papers is the first complete discussion of the fractionation of complex mixtures. The proposed methods are complicated but no more so than the complicated physical process that takes place in a fractionating tower.

Although the equations and methods proposed herein have been checked against plant results on a topping tower[1] and a natural gasoline stabilizer,[2] the primary usefulness of the method is in determining the effect of such important variables as reflux, number of plates, yields, and general distribution of components. However, if sufficient data and patience are available, it is entirely possible to compute with reasonable accuracy the yields and distillation curves of all of the products of a multiple-draw complex-mixture tower.

The theory underlying the method proposed in these articles is sound, but there are several factors which at present detract from the usefulness of the method. One of these is a lack of equilibrium data, particularly the effect of high-boiling components on the equilibrium constants of low-boiling components. In light of the studies in these papers,[3] it appears that vapor pressures may be used to compute equilibrium constants for petroleum fractions, but the equilibrium constants for natural gasoline hydrocarbons must be corrected for the effect of other components. Another difficulty is the lack of a comprehensive correlation[4] between true-boiling-point curves and A.S.T.M. distillation curves. By the equations presented herein, the distribution of components (or fractions) is obtained as a true-boiling-point curve, and most plant men are so unfamiliar with this type of curve that they cannot judge what constitutes good fractionation. A third difficulty is the efficiency of bubble plates. From studies of these equations, it seems that bubble plates are almost 100 per cent efficient—i.e., an actual plate behaves as one theoretical plate.

Considering the complicated nature of the computations and the difficulties enumerated above, perhaps the equations for infinite reflux[5] are at the present best suited for the study of all[4 5] fractionation problems except intermediate towers.[6] Intermediate towers are an exception because they usually operate with very little reflux. The equations for infinite reflux involve nothing but the analysis of the feedstock, the yields of the products, and the equilibrium constants at each of the plates.

$$Y_1 = \frac{100c - wz}{g + \dfrac{Jh}{k_1 k_2 k_3 \ldots k_n}}$$

The symbols[5 6] are defined in Parts 2 and 9 of this series. Such equations are relatively simple and permit a solution of fractionation problems with far less computations than any other method that has been proposed.

Plate Temperatures

Although plate temperatures are not as important[1] as most technical men have thought, the end-plate temperatures, that is, those at which the products are withdrawn, must be selected with care. These temperatures may be computed[7] with fair accuracy by means of the flash-vaporization curves of the tower products. However, the designer must either be able to estimate these temperatures accurately or must make a preliminary computation using the equations given in this series of papers to determine the approximate boiling range of the products.

In natural gasoline stabilizers, plate temperatures are of more significance because such fractionators contain a large number of plates. The proper plate temperatures for such systems can be estimated from plate data.[8 9 10 11 12]

Assumptions and Simplifications

Only one assumption is involved in the fundamental equations, namely, that the reflux decreases a constant amount per plate. This might be construed as meaning that plate temperature also decreases a constant number of degrees per plate but it is not necessary to make this assumption. The fundamental complete equations,[13] are numbers (8), (10), (11) and (12) in Part 1. Equations (27), (28), (29), (30) and (31) in Part 2,[5] should be used only for petroleum towers in which the value of e is more than 10. Such a value of e is a large but commercial amount of reflux. In every application it is necessary for the designer to make modifications in the equations to change from vapor products to liquid products[6] and vice versa; to change from mol percentages to liquid-volume-percentage (Equations 16 to 19); or to correct for the amounts of component[9] that leave the tower in other tower sections than the one being studied, to meet the particular conditions of his problem. In many instances the rather simple equations for infinite reflux may be used.

Fig. 15—Multicomponent fractionating tower

Trial-and-Error Solution

In checking plant data, the constants such as yields, reflux rates and temperatures are all consistent with each other and hence the equations can be applied with little difficulty. The sum of the components, i.e., x_1 or Y_1, for any product totals to 100 per cent, as it should in a perfect solution. However in the case of design, the yields and temperatures must be estimated before the equations can be used. Usually, the yields designated by g and h, must be corrected in order to make the sum of the x_1 or Y_1 term total to 100 per cent—and in a few cases the adjustment of the yields will be so drastic that the temperatures should also be corrected. An experienced man will have little trouble with these corrections but the novice will find himself caught in a maze of contradictions.

Effect of Reflux

The amount of reflux used at the top of most multiple-draw towers is so large that for practical purposes it may be considered as infinite.[4 14] The same[3] is true of most natural gasoline stabilizers because of the reboiler heat that is used at the base of the tower. For the most exact computations it is obvious that the actual reflux should be employed.[3]

In intermediate towers,[6] the reflux is relatively low because it decreases as it proceeds down the tower, and for these towers the actual reflux should always be employed. As an extreme case, the intermediate tower that lies just above the feed plate in most petroleum towers may receive no excess reflux at all, i.e., the reflux that flows into the top of it may disappear almost entirely by the time it reaches the bottom (or feed) plate.

Thus, in most wide-boiling range towers such as those employed in the petroleum industry, it is not necessary to consciously strive for more reflux than that required by a regular heat balance.[1] although in all cases theory requires that slightly more than this amount must be used if the lowest side-draw product and bottom product are to be fractionated at all. This introduces another concept, namely that of "least reflux".[5] For the case of "least reflux" the value of e is exactly one, which means that the reflux flowing into the top of the tower is completely utilized in maintaining the low temperature that exists at the top of the tower and no reflux flows from the bottom tray. Under this condition of "least reflux" it is obvious that no change in the composition of the vapor that enters the bottom of the tower can occur, because even if different liquids are accumulated on the trays of the tower, there is no way for the heavy components to flow from the bottom of the tower and hence they are eventual-

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ly eliminated through the top product. Another important concept is that of minimum reflux.[14] For every desired composition of overhead product there is a minimum amount of reflux that can be used. This quantity is usually high (about $e = 6$ for the top section of a topping tower) but even so it is less than the amount required by most heat balances and therefore is seldom of much significance.

Effect of Number of Plates

In most multiple-draw towers the amount of reflux required by heat balance for the upper section of tower is so large that it overshadows the importance of number of plates.[15] Thus, it makes little difference whether 4 or 10 actual plates are employed in the top section of the tower. At lower intermediate towers more plates are required but since the products produced at these plates need not be well fractionated, the use of only four or five plates is entirely adequate for the production of normal stocks.

The fine fractionation required in most debutanizers and gasoline fractionators makes the number of plates an important variable in such plants.[16] In a typical natural gasoline stabilizer tower operated for cutting between the butane and isobutane the use of 10 plates failed to eliminate all of the propane, the use of 20 to 40 plates gave a suitable separation of butane and isobutane, but the use of 50 plates seemed to be unnecessary.

Effect of Fractionation on Yield

For extremely complex mixtures such as those encountered in distilling petroleum mixtures, the yield is little affected by degree of fractionation. This can be explained most satisfactorily by considering the minimum reflux quantity mentioned above. The minimum amount of reflux required for the production of most gasoline products is so large that it gives a degree of fractionation that is almost equivalent to infinite reflux.[14] Thus, a minimum reflux is required for a given separation and the use of additional reflux over the minimum scarcely improves the fractionation or the yield.

In the extreme case of natural gasoline stabilization, the large differences in the equilibrium constants of the common hydrocarbons makes the yields quite different for different degrees of fractionation. Thus in a common stabilizer system,[16] the yield of gasoline ranged from 73 to 57 per cent when using towers containing 10 to 40 plates. However, the low yield of 57 per cent was for a 16-pound gasoline, whereas the yield of 73 per cent was for a 25-pound gasoline.

Intermediate Towers

For towers from which liquid products are withdrawn at both the top and bottom, no entirely satisfactory equations have been developed. In these towers, the composition of the reflux cannot be defined as either y_1 or x_1. The true reflux composition can be defined in terms of the compositions of the products withdrawn in higher sections of tower than the one under consideration, but this so complicates the equations that they become useless for practical purposes. For these reasons, it is suggested that the most simple equations, namely, those based on a reflux composition of $x_R = y_1$, be employed. By so doing the yields[8] of the products from the tower are too large, but the degree of fractionation is substantially correct.

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SAFETY— Necessary on Thrible Board

Rotary derrick men perform their special task with equipment similar to that shown in the above photograph. The platform is located generally on the eleventh girt of the derrick, approximately 90 feet above the ground. Because of the height and the speed with which the derrick man works, it is necessary that special equipment be provided.

The thrible board shown is made of drill pipe covered with rough timber and resting on foundation pipes made from 6-inch drill pipe. Bolts hold the board to the pipe and the pipe to the derrick girt so there is no possibility of knocking the board out of the derrick.

Lying on the board is a safety belt, and as soon as the derrick man arrives at the board he fastens this around his waist. A shoulder strap prevents him from going through the belt in case he falls from the board with his head down. At one time derrick men were a little careless about wearing the belts provided and also paid little attention to where they tied the safety line. The line in the photograph is tied to the second girt above the derrick man's head, and while it allows him plenty of freedom in his work, the belt will catch him about a foot below the board. If the line is too long the sudden stop after a drop of a few feet will break a man's rib or break the belt, allowing the man to fall to the floor.

Tied to the girt above the board is a hand line to which the derrick man holds while swinging the blocks and steadying the pipe while it is being spun up. Just above it is an electric light bulb which will throw the derrick man into a silhouette so the driller can see him while making a night trip.

While the board is rough finished, in wet and icy weather it can become very slippery, and for foot braces this derrick man has nailed ropes to the board. To make his work easier he has bolted a short, heavy steel rod to the board and placed a lock bolt in front of it. While coming out of the hole it is swung back on top of the board, but while going into the hole it projects over the edge of the board and is locked in place by the bolt in front. This eliminates the necessity of the derrick man holding the pipe with his knees, foot or shoulder while latching the elevators on a stand.

The tips of the hay-rake are seen in the lower left of the photograph. This device is used to keep the drill pipe in place while making a trip. The board is cut out to provide more space for storing pipe. Not shown in the photo are two ropes, one for pulling pipe into the board preparatory to unlatching the elevators and the other for a hand grip when placing the pipe into its position in the hay-rake.

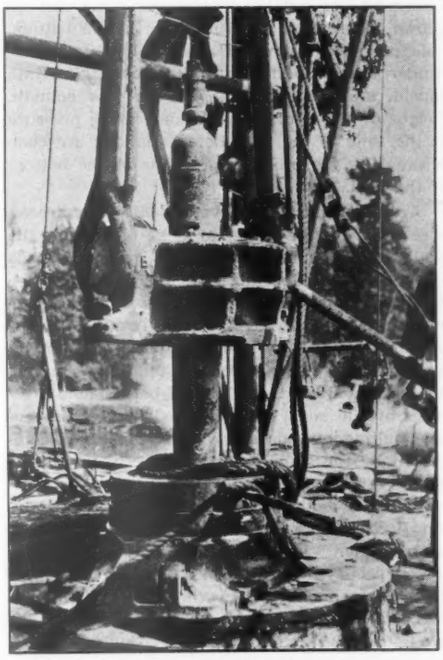
Derrick men are responsible for the installation of the board and equipment and most contractors will provide them with anything that will make their work easier or safer. In the winter time this section of the derrick is "boxed in" with tin, boards, or canvas.

Just below the board is a steel tong board which is also bolted to the derrick girts. Pulleys for the tong lines are bolted to the tong board through holes provided for that purpose.

Deeper Cotton Valley Drilling Brings Added Difficulties

As one of the deepest fields currently under active drilling development in the country, Cotton Valley in North Louisiana has become an important proving ground for new types of heavy equipment and methods. At present there are 21 rigs active in the field, aiming at completion of oil or gas distillate wells in three horizons of the Travis Peak and lower Marine sections.

A greater share of the wells in the field are drilled to the lower Marine horizon, with total depths ranging down to 9,017 feet. Bottom-hole pressure in the Bodcaw sand of that section averages 3,850 pounds, and bottom-hole temperature approaches 250° F. These conditions require suitable drilling equipment and a very close check on mud specification and condition of the hole.



In running casing through the Bodcaw sand, a circulating head was attached to the top of the casing and the string washed through the sand section where mud had caked on the face of the sand

The selection of producing horizons in drilling in Cotton Valley makes drilling operations in that field unique. The Holloway oil sand, which occurs in the Travis Peak section at from 5,557 to 5,886 feet, is variable in its existence over the extent of the structure. On the other hand, the Bodcaw sand, occurring at from 8,250 to 8,650 feet in the lower Marine horizon, shows a marked regularity, and it has not failed to produce in the area drilled to date. In addition, the "D" sand, a stringer lying immediately above the Bodcaw, has been proven for oil production in two wells, and its productivity is now being investigated in drilling wells.

The acreage factor in the Holloway horizon is based on the 40-acre unit, while wells drilling to the Bodcaw and other lower Marine sands are limited to 80-acre units. These conditions give rise to the almost uniform method of developing the field.

Because of the uncertainty of production in the Holloway sand, wells in undeveloped leases are drilled on 80-acre units. A short surface string of 13⅜-inch casing is generally set at about 600 to 800 feet. As the drilling well approaches the Holloway level, time drilling, coring, and checking of samples are employed to check results of the Schlumberger surveys made to that level. In most cases the regular string of 9⅝-inch casing is set through the Holloway sand where it is present. If it shows possibilities for production, perforations are shot in the casing and the horizon is given a test.

If the Holloway sand proves productive the well is completed in that horizon. Operators may then drill a second test to the proven Bodcaw sand, following the same procedure of setting 9⅝-inch casing in the Holloway horizon. This precludes the risk of drilling an expensive test to the Holloway without the assurance of a deeper producer located on the 80-acre unit required. The setting of a larger oil string in the Holloway leaves the way open for future drilling of a full-sized hole to greater depths should the field be further developed in the lower Marine or lower horizons.

Wells in the Bodcaw sand are completed through either open hole or perforations, with the 7-inch casing set above the sand or on bottom. The completion of a Holloway well requires little additional attention over the usual precautions, but as drilling tests approach the lower Marine, safeguards against blowouts become very important.

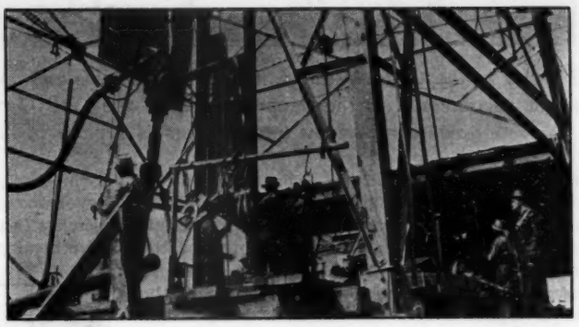
A good example of the dangers in drilling the lower Marine section is illustrated in the work of the Hunt Oil Co. in drilling two tests several hundred feet deeper than the Bodcaw sand. The first deep exploratory test, No. 8 Babb, was carried to a total depth of 9,017 feet, discovering a number of additional sand bodies below the Bodcaw pay zone. In a second deep test, No. 1 Pardee, bottomed at 8,777 feet, these sands were checked, and operators profited by using safety methods learned in drilling the first deep test.

New Sands

The Hunt Oil Co. No. 1 Pardee logged the following sands in the lower Marine section:

	Feet
"A" sand	7,870-88
"B" sand	Missing
"C" sand	8,127-46
"D" sand	8,173-81
Bodcaw sand	8,257-8,306
Davis sand	8,528-47
Crow sand	8,628-50
Justiss sand	8,692-8,733

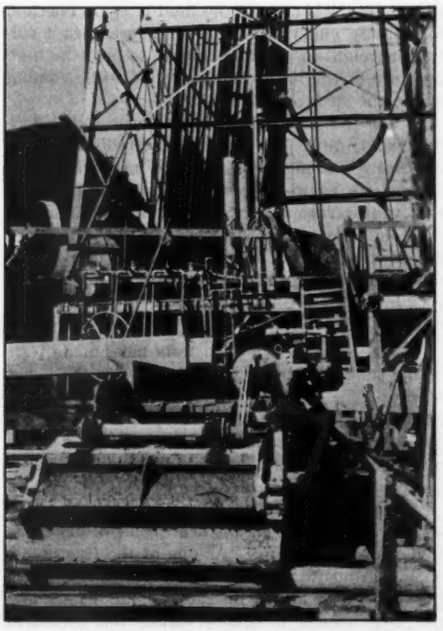
Three other sand bodies were encountered below the newly discovered Crow and Justiss sands. They occurred at 8,940-47, 8,976-84, and 8,991-9,000 feet. The high-pressure gas in these sands below the Bodcaw was the principal source of trouble in drilling the deep tests.



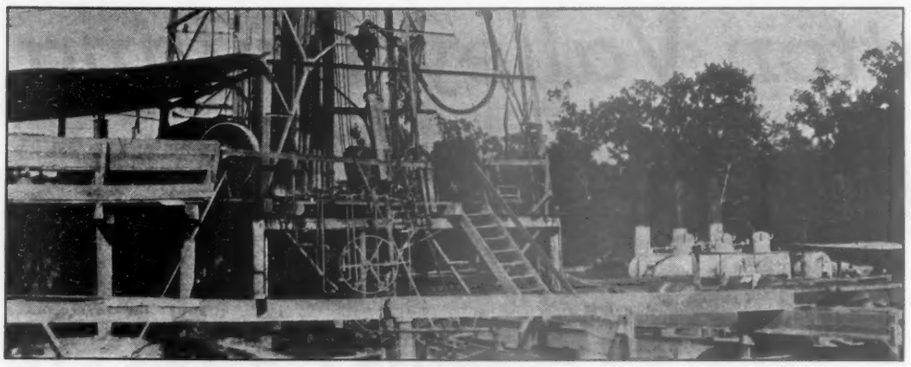
Running casing on the Hunt Oil Co. No. 1 Pardee, the second deep test drilled in Cotton Valley

Native 10-pound mud is generally used in drilling to about 6,500 feet, below which the gravity is increased by addition of artificial muds. When encountering the Bodcaw horizon, and in drilling below it, it has been found necessary to carry mud weight at 11 to 11.3 pounds with a viscosity of 23 or 24.

This was found necessary after a blowout threat in the first deep test. In drilling below the Bodcaw, it was found that the pressure of the mud at the face of the sand caused it to filter out and to



Vibrating screens are of considerable importance in keeping mud in condition while drilling in the high-pressure and -temperature formations of deep Cotton Valley. Blowout preventers and heavy equipment are standard for all drilling rigs



Drilling in the Cotton Valley field of North Louisiana presents problems comparable to those encountered in the deepest fields of the Gulf Coast or in California. This heavy rig, powered by three boilers is typical of the equipment required

form a cake on the sand face. Thus, when a trip was necessary, the drilling string, coming out of the hole, produced a swabbing action where this mud had caked flush around the string, and the reduced pressure below the Bodcaw caused serious mud cutting from the high-pressure gas in the lower, tighter sands. The well kicked and threatened to blow out.

From the experience in the first deep test, operators devised a method of coming out of the hole which has prevented the danger in the second test, and will set an example for future deeper drilling in the field. After the Bodcaw sand had been passed, operators made a short trip every eight hours, circulating, coming out to above the Bodcaw, and washing and reaming back through the Bodcaw. This cut the mud cake at that level and prevented the swabbing action in coming farther out of the hole.

In making a round trip, the procedure is to circulate for one and one-half hours on bottom. A close check is made in coming out to see that the hole takes mud, showing that gas from the lower sands is not entering the hole. When the 9⅝-inch casing at 5,800 feet is reached, circulation is continued for an hour, and the mud is again checked for gravity and viscosity. This guarantees a sufficient weight in the mud column to hold the high pressure of the lower Marine sands while coming out to the surface.

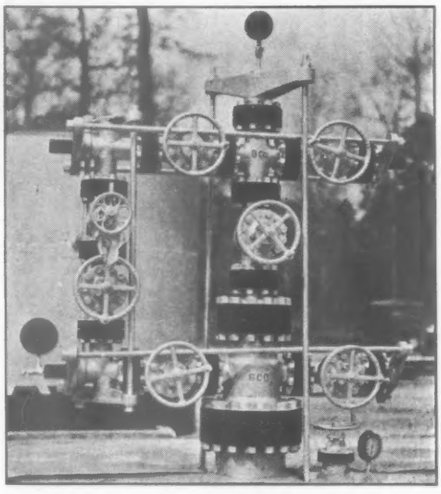
When the 7-inch oil string was run in the Pardee No. 1, difficulty was encountered in passing the Bodcaw sand, because of the mud which had filtered out against the surface and had not been removed by reaming or washing in coming out of the hole. The casing was successfully run through the Bodcaw by attaching a circulating head to the top of the casing, and successively pulling out and washing down until the bottom of the casing passed the sand.

Neither of the two deep tests have made tests of the sands underlying the Bodcaw in the lower Marine. Their presence, however, points to the existence of other possible deeper bodies which may compare favorably with the Bodcaw in thickness and porosity and may greatly augment the reserves in the deep field.

This possibility was taken into consideration by operators at the recent hearing held on Cotton Valley in Baton Rouge. As one of the five points on which operators were in accord, it illustrated the cooperation among operators, land owners, and the Department of Conservation for measures which will insure best development of the deep horizons.

At the hearing, operators agreed in asking extension of the 80-acre spacing rule to cover the oil-producing section of the Bodcaw sand, which apparently encircles the gas-distillate cap on the flanks of the structure. The grouping of all lower Marine horizons, from the "A" sand down to the deeper unexplored sections of the same body, into one classification was also generally suggested.

In dealing with the problem of placing allowables on oil producers in the Bodcaw, it was suggested by some operators that the present basis of withdrawal on demand for gas be continued, and that the withdrawal of oil on the flanks be regulated by a computation of reservoir evacuation. This would allow the production of a volume of oil which equals the volume of distillate and gas produced daily in the other Bodcaw wells, both oil and gas-distillate volumes being corrected to reservoir conditions of pressure and temperature. The work of computing this basis will be studied.



Production of gas and distillate with a reservoir pressure of 3,850 pounds requires surface connections of the heaviest type and most advanced design. (Courtesy, Louisiana Department of Conservation)

In addition to the discussion of future regulations for the field's development, a report was made by the Cotton Valley engineers committee on a preliminary study investigating the possibility of constructing a recycling and pressure maintenance project to improve the recovery of condensate from the field.

FLUID LEVEL

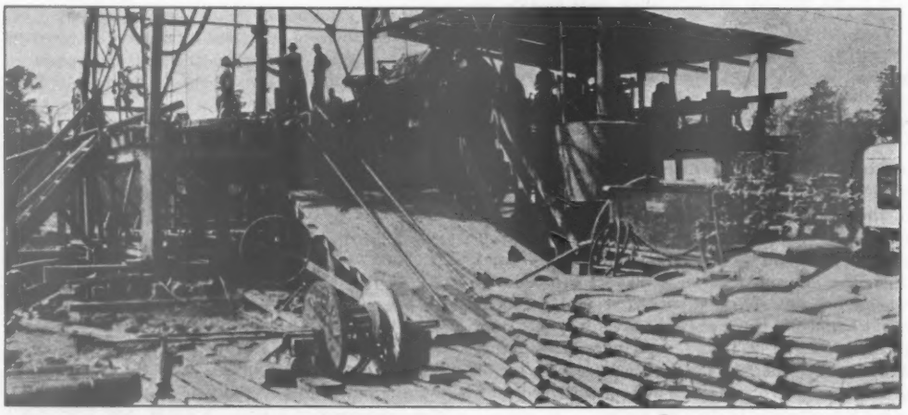
(Continued from Page 44)

well will cut this foam sufficiently to give a good reflection. This method will be tried in East Texas wells which show that condition. Higher pressures in the gas column provide a much better transfer of the sound wave energy.

The application of this procedure will vary with the individual problems encountered at each well. Bottom-hole pressures are determined, not by estimating the weight of the fluid head in the well, but by making various tests at different determined casing head pressures. This method allows accurate calculation of the actual bottom-hole pressure, from the relative heights of the fluid column at different pressures, taking into consideration the weight of the gas column, weight of the liquid column and casing pressure at the time of the test. Determinations are complicated by the presence of water in the bottom of the well.

An important factor favoring this type of pressure testing is the ability to make tests while the well is being pumped or operated by gas lift. This affords rapid determinations during actual production. The principal advantage which the Echo-Meter method will have in East Texas, however, lies in its simplicity of application. In pumping wells, and in gas lift wells installations employing inside valves, the taking of bottom-hole pressures by the usual bomb method involves expensive pulling of rods and valves. This is circumvented by the sound reflection procedure in the space between casing and tubing.

The new method is of further use in determining fluid levels and valve locations in gas lift wells, under variable conditions, to investigate the efficiency of the gas lift in individual instances. In such tests, a shot is usually made while the well is at static equilibrium before gas lift is begun. This is followed by tests made each hour during gas lift operations until it is determined whether or not valves are properly set with relation to the fluid level fluctuations during the production of the well.



Preparing to cement casing through the Bodcaw sand at 8,777 feet

LIFTING METHODS

(Continued from Page 39)

expense lower, but the necessity for incurring capital outlay for equipment is deferred until a later period, which is always a popular consideration. More than the consideration of expense is the fact that in most cases as long as wells will flow naturally in large volume, no artificial method can be employed, owing to the gassy character of the oil. As wells decline in production, a period of transition finally takes place in many cases where the fluid level drops to so low a point that excessive quantities of formation gas are required to lift the oil at the rate at which the well will produce, at which time it is possible to place the well on gas-lift and not only lift a greater quantity of oil, but accomplish this at a much lower gas-oil ratio. If, at this time, the well is restricted to a low point of production, it is customary to continue producing the well on natural flow, even at the expense of a high formation gas-oil ratio, rather than meet the outlay for gas-lift equipment, or some other type of lifting equipment that will lift the oil with a lower formation gas-oil ratio.

Natural flow at excessively high gas-oil ratios is not an efficient method to employ on an energy basis. In many instances the writer has demonstrated that lifting the oil at low rates of production results in a much higher formation gas-oil ratio than lifting it at higher rates of flow. This has been brought out in various fields in Oklahoma, Texas and elsewhere where the writer has had opportunity to make sufficient observations that would bear out this point conclusively.

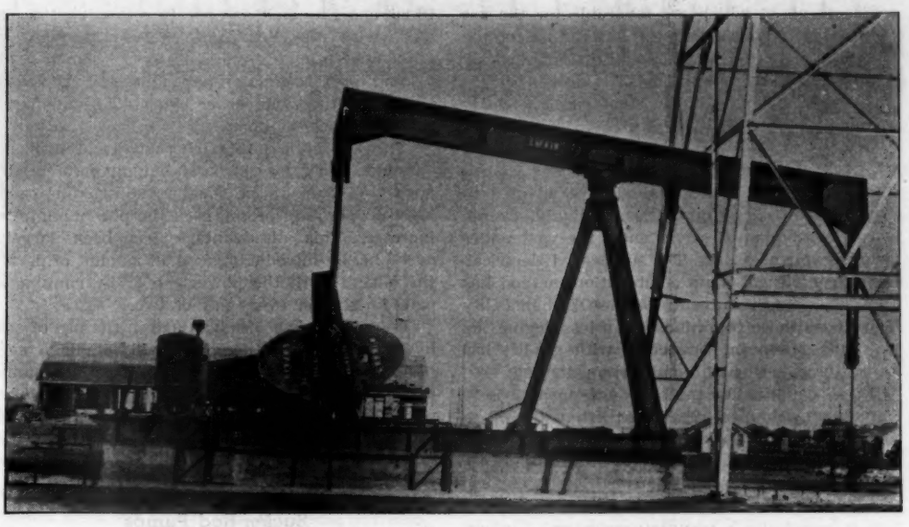
It has been observed that the production of oil at low rates of flow in prorated or restricted fields, such as East Texas, Conroe, Sugarland, Van, Rabbs Ridge, Yates, etc., has resulted in the duration of a longer period of time on natural flow. Whether the total quantity of oil actually produced on natural flow is greater in one case than in the other is not at all conclusive as yet. Where there is a strong water-drive, it would seem as if such might be the case.

The return of a large percentage of the gas produced to the reservoir, beginning with the opening of the field, has received much attention in the past 5 or 10 years, on the supposition that the period of natural flow will be greatly extended, the gas-oil ratio reduced, water encroachment delayed or prevented, and ultimate recovery greatly increased. In this method the by-passing of gas to producing wells in high-pressure fields has been a serious problem and leads to the thought that perhaps there is some happy medium between maintaining a high pressure and the use of the well-known gas-drive, or repressuring method, that has been employed for the past 25 years in the United States, where efforts are directed toward avoidance of high pressures and consequent by-passing. Possibly a gradual transition from pressure maintenance into the gas-drive condition will receive attention in the course of time.

Gas-Lift

By reason of its very nature, gas-lift is the logical method to follow natural flow, unless in the meantime, conditions for its use have become unfavorable. Natural flow is merely gas-lift in which all of the gas used in lifting oil is obtained from the formation, whereas in artificial gas-lift the deficiency of formation gas is made up from another source such as a gas well or a compressor.

Immediately after natural flow ceases, there is almost sufficient gas accompanying the oil from the formation to cause the well to flow naturally. Artificial gas-lift makes use of this formation gas, and adds only that quantity necessary to make up the deficiency. No other method can make use of the formation gas to any important extent in lifting the oil, consequently this energy in the formation gas is largely lost where other methods are applied.



Modern equipment for well on beam, Fitts pool, Oklahoma

Where considerable sand accompanies the oil, there is little difficulty in lifting it with gas-lift. In fact, this method is used for cleaning out wells that have become choked with sand.

In reservoirs where there is a tight sand, it is necessary to lower the fluid flevel only to the point at which the oil will come into the well at close to the maximum rate, and, therefore, when using gas-lift in this type of well, maximum advantage is taken of the pressure in the reservoir to carry on the lifting operation. As an example, a well in the Oklahoma City field in a Simpson sand with formation pressure above 1,000 pounds was completed with 9⅝-inch casing, and 3-inch tubing was suspended in the hole. The well was produced on gas-lift through the casing and while making about 300 bbls. per day, the flowing pressure at the bottom of the tubing was 14 pounds and consumption of input gas was approximately 2,500,000 cubic feet per day, or 8,333 cubic feet per barrel. The flow was then turned through the 3-inch tubing and a production almost as great was made as when flowing through the casing. The flowing pressure required through the tubing was about 180 pounds and consumption of gas was 800,000 cubic feet per day, or 2,670 cubic feet per barrel. In other words, advantage was taken of the fact that as much oil would flow into the well when the back pressure at the bottom of the well was 180 pounds as when it was lowered to 14 pounds, with consequent reduction of the input gas to one-third that necessary when flowing through the casing.

Owing to there being no moving machinery in the hole, down-time under favorable conditions in gas-lift work can be made very low. Wells in Seminole and Oklahoma City on gas-lift operated for months or even for years without any down-time.

Costs of compressing gas must be held to a low point if the expense for lifting oil on gas-lift is to be maintained at a low figure. In wells making much salt water where the cost of gas is low, where salt water disposal is a small item, and where treatment costs are low, the lifting costs can be reduced to a low point. In Corpus Christi, there is an example of this type of operation where fluid containing 98 per cent water is lifted at a cost for gas of about 25 cents per barrel of oil. Also in instances where large casing is employed as in Oklahoma City, when pressures are above 50 pounds, gas-lift can be operated at a very low cost.

Unfavorable conditions may exist under which the gas-lift may operate to disadvantage as compared with other methods. In deep wells, with small casing, especially where the reservoir pressure is low, the gas-lift operates at a disadvantage. The quantity of oil that can be lifted may be less than with other methods, and the consumption of gas per barrel may be excessive. If the sand is very permeable, and if the sand section is thick, thus providing for the entrance of fairly large quantities of oil into the well after the reservoir pressure has declined to a low point, continuous gas-lift will not perform in competition with other methods.

In a limestone reservoir in which there is considerable hydrogen sulfide with the oil and in which water has invaded the well, gas-lift is likely to make for rapid corrosion, particularly if the injected gas contains air. The mixture of air with gas is quite noticeable where a natural gasoline plant recycles the gas and in which the gathering lines are under vacuum. The mixture of air with the gas when operating in limestone reservoirs after water invades the well makes for severe corrosion troubles when using gas-lift.

Artificial gas-lift properly handled is more efficient in the total consumption of gas per barrel under similar conditions than is natural flow, in that only the quantity of gas that is actually needed is admitted to the well to lift the oil whereas in natural flow, there is no method known whereby the quantity of gas per barrel can be placed under any positive control. This does not mean, however, that any well flowing naturally can always be placed on artificial gas-lift and the consumption of gas per barrel reduced. If the well is flowing naturally at maximum capacity with dissolved gas, and if this be an excessive quantity of gas per barrel, there is no means by which this method can be changed except to wait until the excessively gassy conditions become reduced.

Production on natural flow can be restricted during proration schedules; so also can production on artificial gas-lift be restricted, and the operating cost on gas-lift is surprisingly low where production is restricted and where the fluid level remains at a high point for a long period of time due to restriction in production. This point is clearly brought out in the East Texas field where fluid levels are high and where the cost of gas-lift installations for highly restricted wells are very low, and under this condition the operating costs with this method are also low.

In summing up the favorable conditions as applying to gas-lift, we can include those of large production, high pressure or the equivalent of high fluid level, tight sand, large casing diameter, low treatment cost, low cost of water disposal,

gassy oil, all of which are favorable for the use of gas-lift. Unfavorable conditions for use of the gas-lift are low fluid levels, small casings especially in deep wells, combination of hydrogen sulfide with water and air, high cost of gas and costly treatment problems.

Combination Gas-Lift Methods

Combination gas-lift methods are adapted to the lifting of large quantities of liquid, or oil, where large quantities will enter the well under low reservoir pressures. The submerged electrical-driven centrifugal-pump combination method has been a big step in advance in the Oklahoma City field under these conditions. To a less degree the hydraulic pump in connection with gas-lift has proven of benefit as a combination method.

In all combination methods, the purpose is to employ a mechanical means for lifting the oil to some point above the pump, from which point the oil is lifted to the surface by gas-lift. The purpose of the pump is to provide an artificial submergence for the gas-lift. The first part of the operation is essentially a pumping operation; the second part is strictly gas-lift.

Combination methods suffer a disadvantage in wells making much sand or gas, and a condition of too much sand may prohibit its use altogether. Likewise a condition where the oil is too gassy may make the use of this method impracticable, since all of the gas must go through the pump in this method.

Intermittent Gas-Lift Methods

Intermittent gas-lift is employed in various forms. When wells have declined to a low pressure and where the input gas factors become high, intermittent injection of gas through the intermediary of a chamber at the bottom of the tubing will sometimes result in lifting more oil at a considerable lower use of gas than when continuous gas-lift is employed.

The plunger-lift is a type of intermittent flow, where no chamber is used in the well. The lifting of oil is performed through the action of a steel plunger passing up and down the entire length of the tubing, lifting the oil on the upward trip. These plunger-lifts consume less gas per barrel of oil when pressures are low than does the continuous gas-lift. Their capacity is limited unless fairly high pressures are available. They are especially satisfactory when high reservoir pressures obtained and when the sand is tight. Difficulties are encountered when hydrogen sulfide is encountered in the presence of water and air. Sand and paraffin offer difficulties, although considerable sand has been handled in some installations, and special types of plungers are available for handling paraffin depositions.

Centrifugal Pumps

The centrifugal pump, electrically driven, has come into prominence for lifting oil under conditions favorable for its use. It is capable of lifting surprisingly large quantities of liquid from considerable depths, and when lifting at a high rate of production, the operating cost per barrel is not at all high. In wells with very low fluid levels, the centrifugal pump works at some disadvantage.

The centrifugal pump has been found very satisfactory in limestone reservoirs for handling large quantities of oil or water, and possesses advantages over gas-lift methods in that corrosion troubles are not as serious in the presence of hydrogen sulfide. There is usually very little sand present in limestone reservoirs to abrade the impellers, and service may continue over considerable periods of time without the necessity of a pulling job.

Hydraulic Pumps

The hydraulic pump has made considerable advance during the past year or two, and in the Oklahoma City field is operating to advantage in wells with very low fluid levels in competition with other pumping methods. Tests seem to indicate a higher production per month at lower costs in some of the wells where hydraulic pumps have replaced other methods.

The hydraulic pump labors under the disadvantage in certain fields of having paraffin deposits build up in the smaller tubing, thus causing the operating pressure on the power pump to increase. This disadvantage has been largely overcome by introducing a small amount of paraffin solvent with the power oil, or by running a paraffin scraper every day or two.

Loose sand is a disadvantage in the use of the hydraulic pump, although it will handle a certain amount of sand if it does not enter the pump in gushes. In common with all pumps, it must be pulled when the sand collects in the well around the gas anchor to the point where oil carries too much sand into the pump inlet, or impedes the flow of oil into the well.

Sucker-Rod Pumps

The sucker-rod pump has been employed under many conditions, and is now in use in the United States in a large majority of the wells which are being produced by artificial means.

The sucker-rod pump can lift large or small quantities of fluid. In the Luling field, Texas, a beam pump lifted up to 2,000 bbls. of fluid per day from a depth of 2,000 feet. In the Beebe field, Oklahoma, a beam pump is reported to be lifting up to 3,400 bbls. of fluid from a depth of about 2,000 feet.

It is surprising that a beam pump can operate at a depth of 6,500 feet in the Oklahoma City field, and ordinarily lift 300 bbls. per day. Under conditions of clean pipe-line oil, high fluid level, and small quantity of sand and gas it has handled here as much as 500 bbls. per day. The cost of the installation for a pump of this kind in this field will range from $10,000 to $13,000. In the Seminole area a pump newly installed is handling 700 bbls. of fluid per day from a depth of 4,000 feet at an installation cost of about $9,000.

The beam pump operates to better advantage with a high submergence, but in wells completed with small casing in a deep field, and where the fluid levels are low, the beam pump is operating in competition with straight gas-lift and combination gas-lift, and is making a larger quantity of fluid. The point in the Oklahoma City field at which the beam pump functions to better advantage than the continuous gas-lift or the centrifugal pump, both in quantity produced per day and in lower cost per barrel, is when the maximum production of the well has declined to about 200 or 300 bbls. per day.

The conditions where the beam pump or the hydraulic pump operate to advantage compared with other methods, are those of low fluid level, very porous sand combined with low fluid level, small production, and in limestone reservoirs containing large quantities of hydrogen sulfide gas mixed with water. The beam pump operates to less advantage compared with flowing methods in wells of high fluid level, tight sand, and in wells making a large production of oil.

The pneumatic head is a sucker-rod type of pump that employs a compressed-gas head above the casinghead to actuate the string of sucker-rods instead of a walking beam. Long stroke and easy reversals of stroke are advantages claimed for this type of sucker-rod pumping equipment. It may be said for these pumps that they have been employed for several years in fields where they have been giving excellent satisfaction.

Ordinary compressed-air heads, and steam heads have been used in shallow wells for handling the string of sucker-rods, but are becoming obsolete.

The objections as to handling of sand and of clean-out operations applies to the pneumatic head, and to ordinary compressed-air heads just as in the case of the more usual type of beam pumps.

Central powers are in wide use in shallow fields where the wells have declined to a small production. Ruggedly-constructed central power equipment is being manufactured in which the band wheel is replaced by a geared eccentric which is driven by a shaft extending from the engine. Some central powers of this type are employed in the East Texas field where the depth is about 3,600 feet.

Central powers actuate sucker-rod pumping equipment, and the same advantages and disadvantages in the well conditions apply as in the case of the beam pump. The central power possesses the advantage over the beam pump that several wells can be driven from one centrally-located power plant, thus reducing the operating cost to a considerable extent. Central powers are generally employed for producing small wells, making from a few barrels per day down to as low as one-tenth barrel or even less, many of which would be prohibitive in operating cost if handled by any other lifting method.

General Observations

The selection of a method for lifting oil is not as clear-cut as one might wish, owing to the different conditions that actually exist; to the conditions supposed to exist but which are different from those which the diagnosis seems to indicate; and to changes in conditions as the wells become older. Changes in conditions may come about through natural changes in the well itself, or through conditions imposed by proration.

In the deeper wells, the usual sequence that seems to be followed, consists in employing natural flow as long as this method will furnish the oil that can be produced or that is allowed to be produced. Natural flow is being followed in many of these wells by continuous gas-lift flow, for a period as long as this method will lift the desired quantity of oil or as long as costs are reasonably low. The use of combination methods will lap over into the period of continuous gas-lift, if such methods can be employed to advantage either in producing large quantities of oil or water, or if they are required for establishing large potentials. If the gas-lift in its different forms reaches the stage when it cannot produce the wells economically, it is customary to follow this method with some form of sucker-rod pump or hydraulic pump. In the shallow wells, or in wells of moderate depth, the sucker-rod pump or similar methods may be employed immediately after the well is completed, or as soon as natural flow fails to lift the required quantity.

In the course of time betterments in these respective methods, or introduction of new methods, may modify the program now being generally followed.

The Naphthenic Acids

The entire field of naphthenic acids has been surveyed by Dr. P. M. Edmond Schmitz, Directeur scientifique de la Petrofina, Bruxelles, et charge de cours a l'Ecole Nationale Superieure du Petrole et des Combustibles liquides de Strasbourg. Many crude oils of the world have been studied and the composition of the naphthenes explained by the authorities. Doctor Schmitz has presented all of the work in orderly form, arranged the data in graphs and tables and discussed his own contributions.

Everyone interested in the naphthenic acids will find much of interest in the original or the reprint. —Extrait des Bulletin de l'Association Francaise des Techniciens du Petrole, November, 1938.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Difference Between Crude Oil and Distillate Wells

Please explain in simple language the difference between a producing pipe line oil well and what is called a distillate well in the coastal area of Louisiana. Also the relative value of the two wells from a practical standpoint.—W. S. L.

I do not believe you quite understand my inquiry. My understanding is that the deep wells in coastal Louisiana below 10,000 feet cost from $250,000 to $300,000. Some of them are described as "distillate wells" and others as "pipe line oil wells." What is the difference to the operator in percentage of the value of the "distillate well" as compared with the other? In other words, what return in dollars would the two wells bear to one another?—W. S. L.

Replying to the question about the difference between an oil and distillate well and their relative values.

Hydrocarbons occur underground in fluid and vapor state. An oil well produces crude oil and gas, and sometimes water, and when these elements have been separated above ground the oil can be run to pipe line and this might be called a "pipe line oil well."

Where hydrocarbons are under high pressure and relatively high temperatures it is possible for them to exist as a gas or vapor. When such a reservoir is penetrated and the pressure released the gas will flow upward and when it is passed through high pressure vessels and the pressure is reduced the natural gas will precipitate a part of its contents as fluid, called "distillate." Such a well might be called a "distillate well."

The relative value of crude oil and distillate is determined by the specific gravity of the two products and it is usually found that distillate will command the higher price because of its higher gravity. The oil well will produce more fluid than the distillate wells and are therefore generally speaking more valuable, especially as they are not drilled as deep as distillate wells.

This is a very brief outline in answer to your questions but there is much in the literature and several articles have appeared in The Oil and Gas Journal about distillate wells which should be of interest to you and may be found by consulting the yearly index.

I am sorry that I did not specifically answer the questions contained in your first letter (see question and answer above), but without some concrete example of the two type wells in question there is not much more to be added than what I have said.

Distillate being a lighter gravity fluid brings a higher price than crude oil. How much distillate one well will make and how much crude oil another would determine the earning capacities of the two wells. Under proration where the rate of production is restricted there is no way to arrive at anything more than a very rough comparison between the two type wells if both are drilled to the same depth. I do not see how a well of each type can be drilled in one field and if the wells are not in the same fields they cannot be directly compared.

For the price of distillate and crude oil you are referred to the current issue of The Oil and Gas Journal in which the present posted crude oil prices are always printed. By deciding upon the gravity of the crude oil and likewise the gravity of the distillate some relative comparison can be made but it will not reflect pay out on the wells unless a number of other factors are considered.

Load of Impact Explained

The expression "load of impact" is often used in connection with loading of derricks and it will be appreciated if you will explain what this means and what effect it will have on the strength of the derrick.—D. N. E.

The impact load on a derrick is one of four loads that this structure is required to sustain, the other three being, dead, live and pulling loads.

The most variable and difficult to calculate is that of impact, which is set up by hoisting and lowering pipe, casing and tools. This type of load will consist of the weight of hoisted and lowered equipment, plus additional load set up by acceleration and deceleration, or as more commonly stated, starting and stopping. The magnitude of this load will vary with the different operating conditions and is largely under the control of the operator but it is usual practice in calculating such forces to multiply the total weight of the material handled by four or five which will give an empirical figure quite suitable for ordinary purposes.

To actually make calculations to determine such loadings would require the use of higher mathematics and is unnecessary for practical purposes.

Estimating Tank Capacity

Can you give me a short method of finding the capacity of small underground storage tanks in gallons?—E. U. N.

For cylindrical tanks multiply the depth by the square of the diameter by .7854, which will give the cubic inches of capacity of the tank, and dividing this result by 231, which is the number of cubic inches to the gallon, the answer will be the capacity of the tank in gallons.

A short method is to square the diameter in inches and multiply by the length or height of the tank in inches. Then multiply this result by .0034, and the result will be capacity in gallons. The factor .0034 is arrived at by dividing .7854 by 231 and thus saving one step in the first operation.

Welding Tool Joints to Drill Pipe

Is it true that some drilling contractors find it advantageous to use their new drill pipe a while before having the tool joints welded? If so why?—H. W. B.

It is not customary to weld tool joints on new pipe but only on pipe that has been used and then reconditioned. After drill pipe has been used a while it is desirable to take it to a shop and have it reconditioned by cutting off the ends and rethreading. As the threads in the tool joints will be worn it is usual practice to weld those joints to the pipe to prevent unscrewing when in use. This is done to save the cost of new tool joints.

Trend of Oil Reserves

I would very much appreciate it if you would make and publish a study of the trend of oil reserves. There seems to be a wide spread impression that oil reserves are diminishing and that there is a distinct shortening of the number of fields in existence and prospective. My impression is that new fields are being discovered faster than old fields are being depleted and that the superior methods of prospecting and refining are actually creating a greater supply of oil than has been used up.—D. B. G.

When you wrote your letter you must have missed the article on page 21 of the November 24 issue of The Oil and Gas Journal because it is a reserve story prepared especially to answer the question you bring up.

Further we publish estimated reserve statistics early each year and will have another article of that nature early in January next.

You are right in the general assumption that we are finding oil as fast as we use it but have you ever thought of the fact that to produce the oil at the rate of consumption presents many problems.

Flush fields do not last long. Stripper wells predominate. Therefore as all wells eventually become strippers the real problem for the industry is to find an abundance of new oil that can be quickly and cheaply produced to make up for the low rate of production of the older wells.

It has been stated that we have 13,000,000,000 bbls. of oil in reserve, but it is qualified by the statement that it will require from 25 to 30 years to produce it. Our demand is increasing and if it is not possible to get the oil out of the ground economically and efficiently at the demand rate then it is of little avail to have large reserves in underground reservoirs.

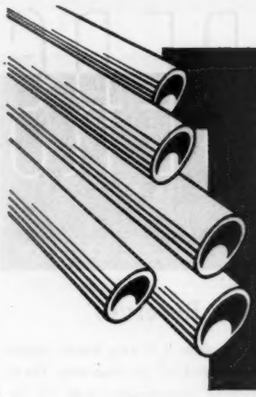
Shifting Crown Blocks

I have been experiencing some trouble with steel crown blocks shifting on the crown block supports on top of steel pumping derricks and would like to know if you have any suggestions to offer to stop this movement.—E. G. N.

Most crown blocks can be bolted to the crown block supports in the proper position and if the derrick is run true and level there should be no reason to place the sheaves out of their established alignment.

However, if the blocks cannot be bolted to their support in the prescribed manner, a good manner of fastening them and preventing movement is to take two pieces of oak timber either 4 by 6-inch or 6 by 6-inch and notch them at each end in such a manner that they will fit snugly over the flanges on the crown block supports and then bolt them tightly against the bottom of the "I" beams forming the body of the crown block.

If these blocks of wood are cut full length of the space between webs of the crown block support members and square across each end, the crown blocks cannot move in either direction and will also be prevented from jumping up in the event of line or casing parting under heavy strains.



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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Detecting and Measuring Loss of Iron From Condensing Coils

Is there a simple method for detecting a loss of iron from condenser pipes from straightrun stills? It is claimed this loss can be determined from day to day; how can the rate of loss from such equipment be determined?—H. D. P.

The water condensed from steam used in the still will furnish information covering the corrosive conditions existing in the condensing system. It is impossible to conduct the distillation of crude oils and the several distillates, with the assistance of steam, so that the water coming overhead will be neutral. The next best condition is to maintain an alkaline reaction in the stream usually by the introduction of ammonia. If the water runs acid there will always be corrosion.

The very slightly alkaline condition required may be controlled by testing the water stream with pH indicators, either solutions or pH papers, or by means of the common indicator solutions such as phenolphthalein or Cresol Red. The pink color produced by phenolphthalein in alkaline solutions, colorless when acid, is well known. Cresol Red has a color range from yellow to red in the presence of an alkali.

The loss of iron from the coils is shown by detecting the element in the water which comes over with the petroleum distillate. The water may be sampled at the look-box. A few drops of potassium ferrocyanide test solution is added to the water, about 10 cc. in a test tube; a blue color forms at once when iron is present.

The measurement of actual loss of iron requires a laboratory determination together with a measurement of the volume of water running in the stream each day. The iron is determined by any one of the quantitative analytical methods and the result then converted to pounds per gallon, or any desired unit, and easily expressed on the basis of a day's operation.

Refineries in the United States With the Cracking Details

Could you supply a list showing the number, and kind of refineries (such as skimming, complete, etc.), in the United States, with the daily capacities? Please include the cracking plants if possible.—D. I. A.

The U. S. Bureau of Mines reports a total of 551 completed refineries, with 10 more building in the United States on January 1, 1938, with a total of 431 in operation. The completed plants had a daily capacity of 4,351,151 bbls., of which 3,970,196, or 91 per cent, represented the capacity in actual operation. The shut-down capacity was the lowest since pre-depression days. There were 235 refineries with cracking units available which produced 932,971 bbls. of cracked gasoline daily.

Plant capacity, by types of plants, was much the same in 1937 as in 1936, with complete plants leading in total capacity and skimming plants leading in number. However, skimming-plant capacity again increased in relative importance, a fact definitely related to the greater use of combination units. A modern skimming plant with a combination unit is far superior to a shell-still plant without cracking coils. On the other hand, the construction of complete plants has fallen off principally because the demand for lubricants has not increased enough to influence construction materially. The demand for asphalt and road oils has increased rapidly, but these products can be made at skimming and asphalt plants, the capacity of which has increased in recent years.

Cracked-gasoline capacity on January 1, 1938, was 932,971 bbls. daily, or 84,443 bbls. more than the capacity on January 1, 1937. This increase represents the addition of 96,299 bbls. and the retirement of 11,856 bbls.

On the old basis of reporting, the capacity of cracking units on January 1, 1937, was 2,216,850 bbls. of fresh charging stock, while on the new basis of cracked gasoline production this capacity was 848,528 bbls., which indicates an average recovery of nearly 40 per cent.

The average daily capacity at cracking plants in 1937 was about 800,000 bbls. of cracked gasoline. The actual daily production of cracked gasoline in that year was 735,000 bbls., or about 90 per cent of capacity. Possibly the maximum ratio in 1937 exceeded 95 per cent; at any rate, cracking units apparently were operated at a relatively high percentage of capacity in 1937.

REFINERIES IN THE UNITED STATES, JANUARY 1, 1938

Type—	Number				Crude oil capacity (bbls. per day)			
	Operating	Shut down	Building	Total	Operating	Shut down	Building	Total
Skimming	276	100	9	385	1,388,966	269,185	93,120	1,751,271
Complete	71	4	..	75	1,819,930	81,170	160,700	2,061,800
Skimming and lube	24	5	..	29	314,500	9,000	1,000	324,500
Skimming and asphalt	38	2	..	40	380,500	16,800	27,500	424,800
Lube	2	6	1	9	1,750	1,800	700	4,250
Asphalt	11	1	..	12	48,150	2,300	.....	50,450
Topping	9	2	..	11	16,400	700	.....	17,100
Total	431	120	10	561	3,970,196	380,955	283,020	4,634,171

CHEMICALS FOR THE PETROLEUM INDUSTRY

Ferrous Sulfate

(Iron Sulfate, Copperas, Green Vitriol)

Use—Water purification.

Form—Bluish green crystalline, efflorescent lumps.

Formula—$FeSO_4.7H_2O$.

Molecular weight—278.

Specific gravity—1.8987.

Solubility—Cold water 32 per cent, hot water 196 per cent.

LIMITATIONS

Insoluble, max., per cent	0.10
Alkalies, max., per cent	0.05
Ferric iron, max.	Trace

Note: Store in tight containers away from light.

Conditions Governing Formations of Petroleum Emulsions

Does the action between particles of lime or shale and crude oil form an emulsion? Would the mixture of oil and well cuttings, say containing these minerals, be properly known as an emulsion?—F. R. H.

A mixture of two liquids such as water and oil, which does not readily separate, that is particles of one liquid remain indefinitely suspended in the other, is termed an emulsion.

There are several forms of emulsions, with many factors that may contribute to their formation. Emulsions are encountered in every phase of the petroleum industry from the well to the final distribution of the products, but the causes for their formation are essentially the same.

Substances of one sort and another aid in preventing the natural separation of water and oil. Most of the emulsifiers met with in the petroleum industry act because of some chemical reaction in the water or a solution in the oil. Lime, magnesium, iron, and aluminum compounds present in oil well waters, and the waters used in refining, tend to unite with some of the compounds in the oil to form "soaps," which assist in holding the water in suspension. A similar function is performed by resinous substances and naphthenic acids contained in some oils.

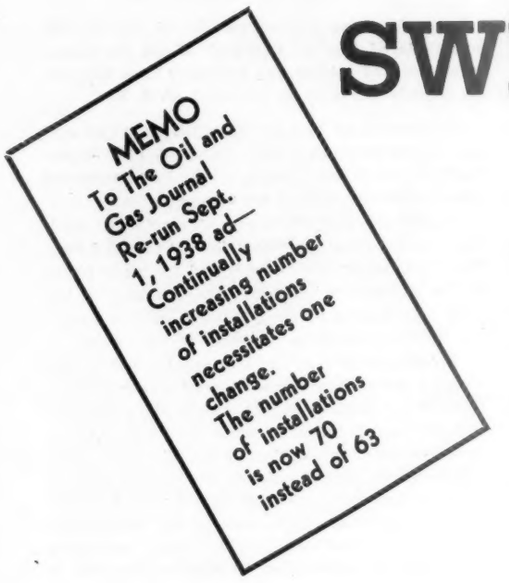
Partially refined oils and crude oils will in most instances produce emulsions when agitated with water. Quoting from Gurwitsch-Moore: "A complete separation of the two phases of oil and water seldom takes place after moderately vigorous agitation. The entire mixture often becomes a more or less consistent and stable emulsion. More frequently a part of the oil and a part of the water separate out on standing as complete phases, while between the two there remains a thicker or thinner layer of stable emulsion. The character of this emulsion may vary greatly. With a mobile petroleum oil containing little resinous matter, when the agitation is not too violent, the emulsion has the appearance of a mass of foam, and consists of relatively large drops of water, which are contained in a network of films of oil. When viscous and heavy oils are subjected to prolonged and vigorous agitation creamy emulsions are formed. Under the microscope these emulsions show countless minute drops of water swimming in the oil in close proximity to each other. Besides these two typical forms of emulsion many intermediate varieties are possible."

A mixture of crude oil and drilling cuttings, with no water, would not constitute a true emulsion. However, it is extremely rare to find an absolutely dry condition in a drilling well when a mixture of drill cuttings and oil is being circulated. Consequently, there is usually some emulsion produced under the conditions stated.

In the absence of water the liquids containing particles of solids, or different fluids, in suspension are known as colloids. Muddy waters and milk are good examples of colloidal solutions. The solids present are so finely divided they may be detected only under a microscope of high power.

Reference: Gurwitsch-Moore, Petroleum Technology, Page 206.

YOU CAN REDUCE YOUR SWEETENING COSTS


MEMO
To The Oil and Gas Journal
Re-run Sept. 1, 1938 ad—
Continually increasing number of installations necessitates one change.
The number of installations is now 70 instead of 63

PERCO COPPER SWEETENING installations are already effecting substantial economies at ~~63~~ 70 refineries and natural gasoline plants. PERCO'S "double saving"* can save real money for you.

If you send us samples of your unsweetened product, we can estimate very closely the extent of your savings. And there is no charge.

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Mid-Continent Crude Runs Reduced Substantially During December

Mid-Continent crude runs will be reduced substantially during December. Major reductions are being made in East Texas which is down 14,950 bbls. daily compared with the November throughput. Danciger Refineries, Inc., and the East Texas Refining Co., both of Longview, Tex., will be shut down for the month of December. In Oklahoma, Barnsdall Refining Corp. has reopened its plant at Barnsdall and is refining 4,000 bbls. daily. The Pure Oil Co. refinery at Muskogee is scheduled to be shut down during December.

Total estimated daily crude runs for the Mid-Continent area will be down 21,005 bbls. in December; total for the month being 503,030 bbls., compared with 524,035 bbls. in November. One year ago crude runs in December were 535,500 bbls.

Oklahoma

Total crude runs in Oklahoma will be reduced 4,875 bbls. in December, having a daily crude throughput of 141,125 bbls. compared with 146,000 bbls. in November. Much of this reduction was due to the Pure Oil Co. closing its plant in Muskogee, which had a daily crude run of 6,000 bbls. in November. Crude runs in Oklahoma are holding up generally with a few plants increasing their runs. Increases are reported as: Johnson Oil Refining Co., from 3,500 bbls. to 5,000 bbls.; Omar Refining Co., from 2,000 bbls. to 2,500 bbls., and the Barnsdall Refining Corp. which is reopening with a daily crude run of 4,000 bbls.

East Texas

East Texas crude runs for December will be cut considerably, with three refineries shut down and a general reduction scheduled for all refineries. Total estimated crude runs for December are 40,925 bbls., compared with 55,875 bbls. in November, a reduction of 14,950 bbls. daily.

North Louisiana and Arkansas

Most of the North Louisiana and Arkansas refiners will maintain their schedules unchanged over last month, it is estimated, although some are planning reductions in crude runs. Total estimated crude runs for Arkansas are reported as 25,200 bbls. for December, compared with 25,325 bbls. in November. North Louisiana crude runs are up 750 bbls. daily, with a total of 45,750 bbls. scheduled in December compared with 45,000 bbls. in November.

West Texas and Panhandle

Estimated crude runs in the West Texas and Panhandle areas remain unchanged for December. A few increases were reported as follows: Cosden Oil Co., Big Spring, from 9,700 to 10,000 bbls.; Gulf Oil Corp., Sweetwater, from 5,400 to 6,800 bbls., and Moutray Oil Co., Hawley, from 900 to 1,000 bbls. Phillips Petroleum Co., at Borger, is scheduled for 24,190 bbls. daily, only a slight decrease over last month.

Kansas

Kansas estimated crude runs are down 2,900 bbls., with a total of 123,950 bbls. for December compared with 126,850 bbls. in November. Refineries reducing their daily runs and the amount are: Falcon Refining Co., Great Bend, 400 bbls.; Globe Oil & Refining Co., McPherson, 500 bbls.; Phillips Petroleum Co., Kansas City, 1,050 bbls.; and the Shallow Water Refining Co., Scott City, 100 bbls.

Southwest Texas

No important changes are anticipated for December in the Southwest Texas area. Total daily crude runs for the month are estimated at 15,500 bbls., compared with 15,450 bbls. in November. Only two changes in scheduled runs were reported for December, these being the Border Oil & Refining Co., Sullivan City, down from 450 bbls. in November to 200 bbls. daily in December; and the Pioneer Oil & Refining Co., Somerset, up, from 900 bbls. in November to 1,200 bbls. in December.

North Central Texas

North Central Texas daily crude runs remain practically unchanged for December with a slight increase in the total for the month, being 31,790 bbls., compared with 31,460 bbls. in November.

Mid-Continent Crude Runs
Average Daily (Barrels)
(Advance estimate compiled by The Oil and Gas Journal)

	1936	1937	1938
January	501,600	531,535	529,710
February	519,960	541,790	507,985
March	478,760	533,875	491,935
April	506,775	558,385	532,120
May	513,510	572,855	527,315
June	527,225	593,625	540,005
July	539,370	605,640	557,520
August	557,650	624,475	554,810
September	553,215	625,485	555,695
October	536,330	619,210	531,325
November	548,015	592,170	524,035
December	535,500	544,040	.....

Operations by Refinery Districts
Daily crude runs

	Dec.	Nov.	Decr.
Arkansas	25,200	25,325	125
East Texas	40,925	55,875	14,950
Kansas	123,950	126,850	2,900
N. Central Texas	31,790	31,460	*330
North Louisiana	45,750	45,000	*750
Oklahoma	141,125	146,000	4,875
Southwest Texas	15,500	15,450	*50
W. Texas Panhandle	79,390	78,675	*715
Total	503,630	524,635	21,005

*Increase.

Estimated Daily Average Mid-Continent Refinery Crude Runs for December

OKLAHOMA

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Anderson-Prichard Ref. Corp., Cyril	7,500	6,500	6,500
Barnsdall Ref. Corp., Barnsdall	5,000	4,000	(*)
Bell Oil & Gas Co., Grandfield	5,000	3,000	3,000
Black Gold Ref. Co., Oklahoma City	2,500	(*)	(*)
Champlin Ref. Co., Enid	16,000	15,000	15,000
Cities Service Oil Co., Okmulgee	4,000	(*)	(*)
Cities Service Oil Co., Ponca City	12,000	8,300	9,600
Continental Oil Co., Ponca City	28,000	16,600	19,500
Cosco Oil Co., Wynnewood	2,500	(*)	(*)
Cushing Ref. & Gasoline Co., Blackwell	1,700	(*)	(*)
Cushing Ref. & Gasoline Co., Cushing	4,200	4,000	4,000
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	(*)	(*)
Globe Oil & Ref. Co., Blackwell	8,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	5,000	3,500
Knox Ref. Co., Covington	300	100	100
Mid-Continent Pet. Corp., West Tulsa	35,000	20,000	20,000
Ohio Oil Co., Bristow	5,000	2,500	2,500
Omar Ref. Co., Garber	5,000	2,500	2,000
Phillips Pet. Co., Okmulgee	6,500	5,325	6,000
Peppers Gasoline Co., Oklahoma City	500	400	400
Pure Oil Co., Muskogee	9,000	(*)	6,000
Rock Island Ref. Co., Beckett	6,500	5,000	5,000
Sinclair Ref. Co., Sand Springs	6,000	4,000	4,000
Sun Oil Co., Yale	5,000	2,000	2,000
Sunray Oil Co., Allen	7,000	3,600	3,600
Texas Co., West Tulsa	16,000	10,000	10,000
Tide Water Oil Co., Drumright	12,000	11,000	11,000
Wilcox Oil & Gas Co., Bristow	6,000	3,300	3,300
Total	235,700	141,125	146,000

*Shut down.

KANSAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Barnsdall Ref. Co., Wichita	5,000	5,000	5,000
Bay Pet. Co., McPherson	4,000	3,700	3,700
Chanute Ref. Co., Chanute	1,000	1,000	1,000
Chase Ref. Co., Chase	800	(*)	(*)
Derby Oil Co., Wichita	8,000	5,600	5,500
El Dorado Ref. Co., Eldorado	5,000	3,500	3,500
Falcon Ref. Co., Inc., Great Bend	1,000	450	850
Globe Oil & Ref. Co., McPherson	13,000	11,000	12,500
Kanotex Ref. Co., Arkansas City	12,000	6,000	6,000
National Ref. Co., Coffeyville	8,000	5,000	5,000
Pet. Products Co., Chanute	1,250	1,000	1,000
Phillips Pet. Co., Kansas City	23,000	16,450	17,500
Roper Pet. Co., Parsons	750	450	400
Shallow Water Ref. Co., Scott City	2,500	1,100	1,200
Sinclair Ref. Co., Coffeyville	12,000	8,000	8,000
Sinclair Ref. Co., Argentine	11,000	8,000	8,000
Skelly Oil Co., Eldorado	23,000	20,000	20,000
Socony-Vacuum Oil Co., Inc., Augusta	20,000	16,500	16,500
Standard Oil Co. (Indiana), Neodesha	7,500	7,400	7,400
United Ref. Co., Russell	1,200	800	800
Vickers Pet. Co., Potwin	4,000	3,000	3,000
Total	164,640	123,950	126,850

*Shut down.

EAST TEXAS

Company and location—	Daily capacity	Av. dly. runs— Dec.	Nov.
Beacon Oil & Ref. Co., Henderson	4,500	(*)	100
Cascade Ref. Co., Reed Switch	2,000	(*)	(*)
Clay Ref. Co., Arp	3,500	2,000	2,000
Danciger Refs., Inc., Longview	6,000	(*)	4,000
East Texas Ref. Co., Longview	6,000	(*)	6,000
Hurricane Pet. Corp., Overton	5,000	2,875	2,875
Hurricane Pet. Corp., Arp	3,300	1,900	2,500
Lacy Ref. Co., Kilgore	3,000	1,800	2,500
Magnolia Pet. Co., Corsicana	5,000	4,600	4,600
Tyler Oil & Ref. Co., Tyler	10,000	3,000	4,500
Paluxy Asphalt Co., Talco	5,000	3,000	3,000
Premier Oil Ref. of Texas, Greggtown	4,000	2,750	3,000
Sinclair Ref. Co., Camp Switch	4,000	1,500	1,800
Solvex Refs., Inc., Gladewater	4,500	(*)	(*)
Southport Pet. Co., Kilgore	4,000	3,000	3,000
Talco Asphalt & Ref. Co., Mt. Pleasant	7,500	4,000	4,000
Texas Co., Dallas	16,000	8,500	8,500
Texas Oil Products Co., Gladewater	3,000	1,000	1,700
Tower Ref. Co., Overton	3,500	(*)	(*)

Company and location—	Daily capacity	Av. dly. runs Dec.	Av. dly. runs Nov.
Utah Ref. Co., Kilgore	2,000	1,000	1,800
Total	105,300	40,925	55,875

*Shut down.

ARKANSAS

Berry Asphalt Co., Waterloo	2,000	800	800
Henry H. Cross, Smackover	6,000	3,000	3,000
Lion Oil Ref. Co., El Dorado	17,000	13,000	13,225
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Ref. Co., El Dorado	10,000	5,900	5,800
Stephens Ref. Co., Stephens	700	500	500
Total	38,200	25,200	25,325

NORTH LOUISIANA

Arkansas Fuel Oil Co., Bossier City	25,000	20,000	19,000
Atlas Pipe Line Co., Shreveport	12,500	9,000	9,000
Bayou State Oil Corp., Hosston	750	500	500
East Texas Ref. Co., Sandra	7,000	1,000	1,000
Lake-Price Refineries, Inc.	800	500	500
Premier Oil Ref. Co. of Texas, Cotton Valley	3,000	2,750	2,500
Rodessa Oil & Ref. Corp., Cedar Grove	12,000	10,000	10,000
Stanolind Oil & Ref. Co., Superior	5,000	2,000	2,500
Total	62,250	45,750	45,000

WEST TEXAS AND PANHANDLE

Aero Gas & Ref. Co., Fort Stockton	350	100	100
Coltex Ref Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	(*)	(*)
Cosden Oil Co., Big Spring	12,500	10,000	9,700
Danciger Refs., Inc., Pampa	6,500	4,800	4,800
Danube Oil Corp., Borger	1,200	800	800
Farmers Ref., Lubbock	500	200	200
Gulf Oil Corp., Sweetwater	7,000	6,800	5,400
Howard County Ref. Co., Big Spring	2,000	750	750
Moutray Oil Co., Hawley	1,400	1,000	900
Onyx Ref. Corp., Hawley	3,000	1,800	1,800
Panhandle Ref. Co., Kings Mill	2,500	1,200	1,300
Payward Ref. Co., Shamrock	600	600	600
Phillips Pet. Co., Borger	35,000	24,190	25,000
Post Refining Co., Rotan	800	500	675
Shamrock Oil & Gas Corp., Sunray	3,000	2,000	2,000
Stamford Ref. Co., Stamford	450	400	400
Shamrock Oil & Gas Corp., Lefors	1,600	1,200	1,200
Standard Oil Co. of Texas, El Paso	14,000	7,400	7,400
Star Light Ref. Co., Ballinger	1,000	150	150
Texas Co., El Paso	2,000	1,300	1,300
Texas Co., Amarillo	6,000	3,000	3,000
Western Ref. Co., Fort Stockton	1,000	700	700
Wickett Pet. Co., Wickett	3,500	2,500	2,500
Total	122,050	79,390	78,675

*Shut down.

SOUTHWEST TEXAS

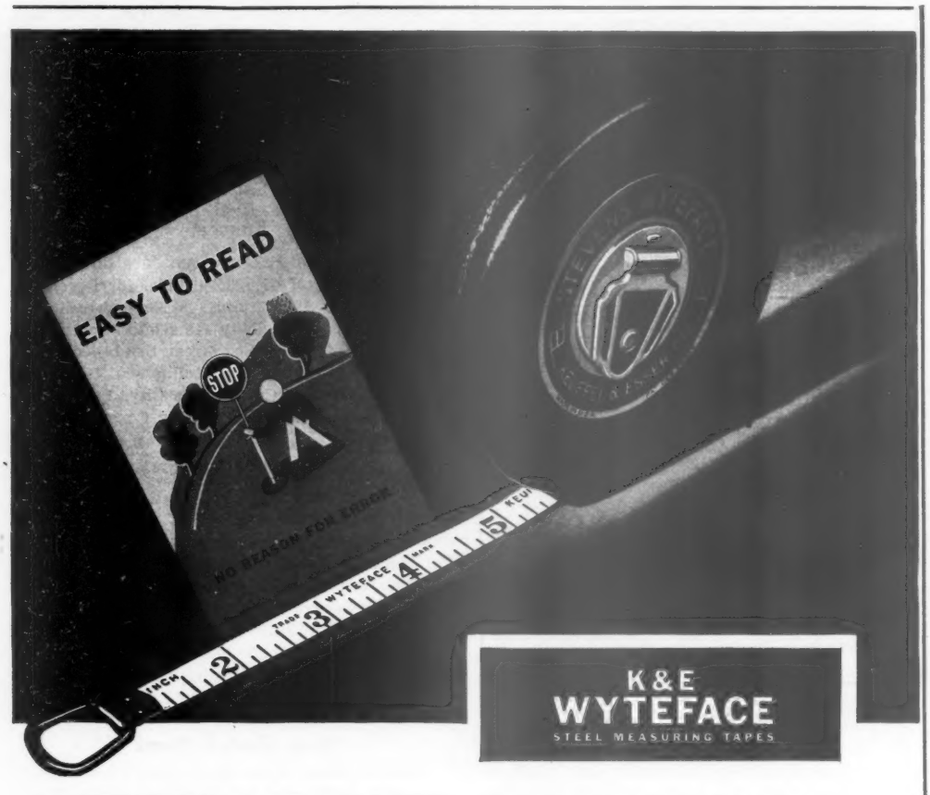
Border Oil & Ref. Co., Sullivan City	1,000	200	450
Carle Ref. Co., Inc., San Antonio	1,000	(*)	(*)
Eggleston Oil Producers Co., Three Rivers	1,000	1,000	1,000
Humble Oil & Ref. Co., San Antonio	5,000	3,500	3,500
Ina Oil & Ref. Co., Hondo	400	(*)	(*)
Magnolia Pet. Co., Luling	8,000	4,000	4,000
Majestic Ref. Co., Dale	500	400	400
Misko Refineries, Inc., Mirando City	4,500	(*)	(*)
Pettus Oil & Ref. Co., Pettus	1,000	900	900
Phoenix Ref. Co., San Antonio	1,200	700	700
Phoenix Ref. Co., Pettus	900	500	500
Pioneer Oil & Ref. Co., Somerset	2,000	1,200	900
Rado Ref. & Prod. Co., McAllen	800	500	500
Texas Co., San Antonio	5,000	2,600	2,600
Total	32,300	15,500	15,450

*Shut down.

NORTH CENTRAL TEXAS

Baird Ref. Co., Baird	1,500	1,200	1,200
Bryson Pipe Line & Ref. Co., Bryson	2,000	1,200	1,500
Coleman Ref. Co., Coleman	1,000	500	500
Continental Oil Co., Wichita Falls	6,000	4,100	3,200
Denver Prod. & Ref. Co., Gainesville	3,000	800	1,000
Exchange Pet. Corp., Albany	800	(*)	(*)
Falls Ref. Co., Wichita Falls	2,500	500	500
Gratex Ref. & Fuel Oil Co., Graham	300	285	285
Gulf Oil Corp., Fort Worth	8,000	5,500	5,600
Hightower Oil & Ref. Corp., Brownwood	750	200	200
Jacksboro Ref. Co., Jacksboro	400	175	175
La Salle Pet. Co., Burkburnett	3,000	1,000	1,000
Magnolia Pet. Co., Fort Worth	7,500	6,000	6,000
Midway Ref. Co., Goldsboro	300	100	100
North Texas Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	3,900	3,900
Olney Oil & Ref. Co., North Olney	3,500	1,000	1,000
Panhandle Ref. Co., Wichita Falls	4,200	2,500	2,500
Panhandle Ref. Co., Lueders	1,500	900	900
Southland Ref. Co., Olney	500	100	100
Taylor Ref. Co., Taylor	1,000	750	750
Texas Pacific Coal & Oil Co., Caddo	800	600	600
Tucker Oil Co., Burkburnett	250	180	150
Tydal Ref. Co., Gainesville	1,850	(*)	(*)
Waggoner Ref. Co., Vernon	4,000	(*)	(*)
Total	62,600	31,790	31,460

*Shut down.



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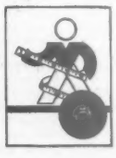

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Warning Against Leaks

Because of the confusion and delay which occurred on the occasion of a recent case of leakage of liquefied petroleum gas in transit over a railroad by tankcar, the Bureau of Explosives, Association of American Railroads, has offered suggestions to railroad employes to guide them in handling situations of this kind.

"We consider it advisable to acquaint you with certain details of these types of cars, a knowledge of which is necessary to facilitate prompt and proper handling of such leakages by the carrier, thus reducing the period of leakage and hazard in cases where assistance by the shipper or the consignee is not immediately available.

"The report covering this particular leakage reads as follows:

" 'Car arrived . . . at 2:30 a.m., August 18, with snow-like icy mass formed around one side of dome and one-half way down on side of tank. Leakage appeared to be around dome cover and very slow.

"Precautions: Isolate the car. Keep lights and fires away. Keep spectators away. Approach leakage from windward side. Handle carefully the housing cover, gauging device housing, and any wrenches or other tools used for tightening nuts, so as to avoid production of friction sparks. All tools should be kept free of oil, dirt, and grit."

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—A Wilcox sand pool opener was completed in Section 21-13-10, Okfuskee County, and a Hunton lime discovery well was completed in Section 16-8-5, north of Maud, in Pottawatomie County. The Grayson pool in Seminole County was extended one-half mile northeast.

KANSAS—Pool openers were completed in Section 18-17-1w, McPherson County, and Section 7-22-1w, Harvey County. Four wildcats in Barton County were showing production, two in the Ellinwood district, one west of Hoisington and the other between the Davidson and Kraft pools. A chat pool apparently was opened in Section 7-19-2w, McPherson County. The Forest City basin leasing play has extended from Missouri into northeastern Kansas.

MICHIGAN—Nine oil wells and 10 dry holes comprised the unusual record for Michigan last week. Operators are loath to drill in the flush fields for fear of overcrowding the crude market, hence operations in proven fields are kept at a low figure.

TEXAS—A new producing horizon (the Government Wells sand) in the Sweden field in Duval County will revive operations in that area. Indications were given of a 4-mile extension of the 4,300-foot pay in the Hull-Silk pool. An east extension of 1 1/2 miles to the K.M.A. pool in Wichita County is seen in the successful testing of a well in the J. McCool Survey. In West Texas a producing horizon was opened in Garza County at 7,327-34 feet by Gulf Oil Corp. The well swabbed 150 bbls. of oil in 14 hours. The J. E. Mabee well, lying between the Wasson and Bennett pools in Yoakum County, made a completion gauge of 2,840 bbls., a larger production than has been shown by wells in either of the pools named. A gas and distillate well gave a half-mile extension to the Ordovician production in western Crane County. Reeves County has production in a new spot, and the third pool opened within a month in Jones County was reported. A wildcat in Coleman County is showing oil from the Canyon sand.

CALIFORNIA—A well drilling in a new deep zone in the Wheeler Ridge field in Kern County is testing high gravity oil. Kettleman Hills has two new wells good for 2,450 and 2,135 bbls. respectively. The Canal pool was extended southerly by a 928-bbl. initial producer.

LA-ARK-TEX—A 638-bbl. well opened the Golden Meadows pool in La Fourche Parish, southern Louisiana, the well producing 37-gravity crude at 8,500-20 feet. The Bancroft field in Beauregard Parish was extended a half mile. In Arkansas two wildcats gave indications of opening pools in Smackover lime in Columbia and Union counties. Increased work is noted in the old Smackover and Champagnolle fields of Ouachita and Union counties. The Rodessa pool, in Texas, Louisiana and Arkansas produced 80,248,585 bbls. up to November 30.

ILLINOIS—A new production peak was registered in the past week when the basin fields averaged 104,887 bbls. per day and the old fields 10,990 bbls., a total for the state of 115,877 bbls. New oil wells dropped to 66, a decline of 14 from the previous week. No large new wells were reported.

Completions in All Fields

(Week Ending December 10, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa., and W. Va.	45	15	2	62	3,332	4,402
Ohio	6	11	3	20	928	1,212
Indiana	3	1	7	11	132	129
Kentucky	9	7	8	24	848	316
Illinois	66	3	15	84	2,028	775
Michigan	8	0	9	17	891	692
Kansas	18	0	5	23	1,510	2,505
Oklahoma	17	3	9	29	1,604	2,507
Texas:						
North Central Texas	22	0	25	47	2,893	2,590
West Texas	35	0	5	40	1,854	2,566
Texas Panhandle	5	3	0	8	532	792
East Texas	19	0	0	19	1,667	2,291
East Central Texas	4	0	1	5	331	684
East Texas Border	1	0	0	1	126	312
Gulf Coast Texas	17	0	2	19	1,246	1,496
Southwest Texas	36	1	6	43	2,056	3,037
Total Texas	139	4	39	182	10,705	13,758
North Louisiana	3	3	1	7	592	636
Gulf Coast Louisiana	11	0	3	14	463	433
Total Louisiana	14	3	4	21	1,055	1,069
Arkansas	5	1	0	6	234	174
Montana	1	0	0	1	103	214
Wyoming	1	1	1	3	148	105
Colorado	0	0	0	0	13	19
New Mexico	13	1	0	14	533	664
Utah	0	0	0	0	3	4
California	20	0	9	29	1,211	1,431
Total United States	365	50	111	526	25,278	29,976
Total previous week	370	35	103	508		
Week ending Dec. 11, 1937	512	61	126	699		

Outstanding Fields--Highlights

(Week Ending December 10, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	21	37	9	7,376	885	16,600
Wasson-Bennett	7	23	8	8,274	200	11,336
Ector County	8	52	8	9,494	1,383	41,400
Winkler County	5	9	4	3,815	1,740	36,050
Howard-Glasscock	6	19	1	327	1,033	75,000
East Texas	21	37	19	1,197	25,789	371,396
OKLAHOMA						
St. Louis	8	29	4	1,074	734	26,250
Oklahoma City	3	9	1	409	1,086	91,800
KANSAS						
Barton County	4	18	3	912	389	9,590
Stafford County	4	19	1	930	212	4,535
Rice County	4	16	2	1,213	1,251	26,980
Russell County	2	21	0	0	1,171	20,975
NEW MEXICO						
Lea County	9	86	8	769	1,948	90,970
LA-ARK-TEX						
Rodessa, La-Ark-Tex	4	11	1	175	1,048	65,215
Cotton Valley, La. (deep)	1	17	1	240	101	9,595
Schuler, Ark.	0	20	3	705	125	17,525
Jennings, La.	1	14	2	607	127	23,139
MICHIGAN						
Freeman-Redding	10	16	1	500	39	8,463
ILLINOIS						
Central Illinois	61	415	63	15,134	1,894	104,887
CALIFORNIA						
Wilmington	6	12	4	1,087	586	97,600
KENTUCKY						
Birk City	6	9	2	300	103	4,880

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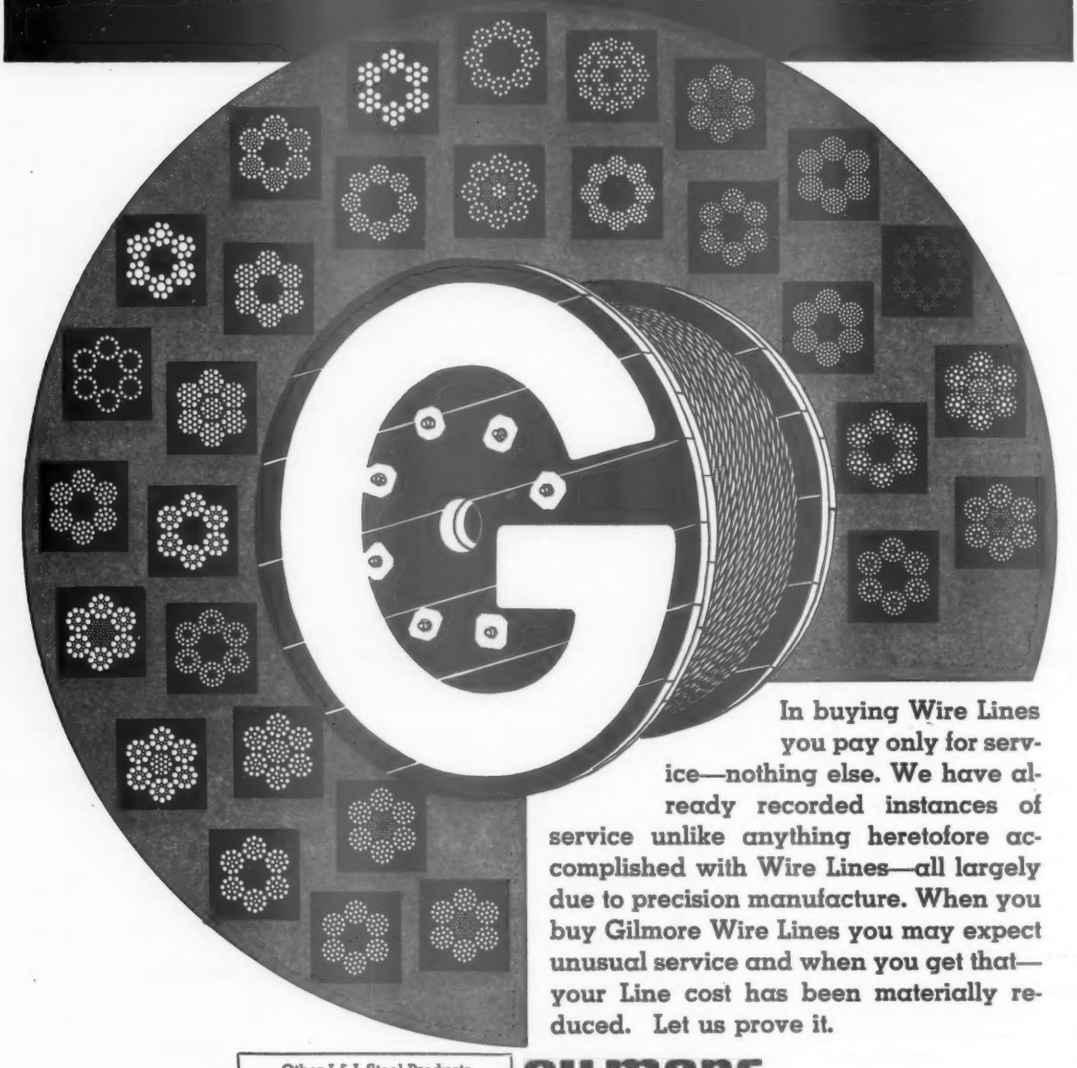

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Illinois and Kentucky

By STAFF CORRESPONDENT

Production in Illinois at New High, 115,877 Bbls. Per Day

CENTRALIA, Ill., Dec. 12.—Eighty-four wells were completed in Illinois in the past week in review of which 66 were oil wells with a total first 24-hour production of 15,139 bbls. or an average of 252 bbls. per well; 15 dry holes and three gas wells.

In the Salem pool in Marion County 22 new wells produced 6,977 bbls. in the first 24 hours, an average of 317 bbls. per well. There were four dry holes in the district. One well in the Patoka area was completed for 90 bbls. initial production. In Fayette County, the Louden pool accounted for 33 new oil wells with a total production of 6,698 bbls. or 203 bbls. per well in first 24-hour production. One dry hole was reported. In Clay County four new oil wells producing 797 bbls. initially and no dry holes constituted the week's record and in Wayne County three new oil wells with an initial of 530 bbls. were reported. In other counties the record was as follows: Wabash, one dry hole; Clinton, one 22-bbl. well and one dry hole; Bond, an estimated 20-bbl. well, producing cut oil; Clark County, a fractional-barrel well; Lawrence County, one 15-bbl. well, three good gas wells and two dry holes; and in Williamson and Jasper counties a dry hole in each and in Jefferson County, four dry holes.

Seventy-eight new operations were reported, including locations, rigs and wells drilling.

New Wildcat Work

New wildcat operations in the state included the following:

In Jackson County, Ben Banner No. 1 Dean, NE NE SE Section 33-7s-3w, a location.

In St. Clair County, Group Oil Co. No. 1 Reuss, C NW SW Section 28-3s-6w, drilling at 365 feet.

In Clinton County, H. Flannery and others No. 1 Charles Gerdis, near C NW NW SE Section 3-2n-2w, spudded. A. C. Thomas and others No. 1 Holthaus, SW NW SW Section 21-2n-3w, drilling at 625 feet.

In Jefferson County, Brogas & Blair No. 1 R. Merriman, NW cor. NE NE Section 15-2s-1e, moving in rotary tools. Magnolia Petroleum Co. No. 1 Joe Lange, SW SW SE Section 27-2s-1e, location.

In Cumberland County, Jeffries and Cobb No. 1 Mrs. S. E. Miller, 327 feet from S and 660 feet from E lines of Section 29-10n-9e, set pipe at 102 feet.

In Coles County, R. F. Wheless No. 1 Wilfred W. Michaels, SW SW NW Section 1-11n-7e, location. Texas Canadian Oil Co. No. 1 S. Dollars, C SE SW Section 3-12n-8e, rig up. Cartmell and others No. 1 W. H. Tracy, NW NW SE Section 22-13n-7e, location.

The Week's Completions

Following were the completions of the week, the initial production given representing 24 hours production unless otherwise stated:

In Wabash County, Associated Oil Co. No. 1 Chapman, C SW SE Section 13-1s-13w, of second principal meridian, dry and abandoned at 3,500 feet.

In Clinton County, Adams Oil & Gas Co. No. 4 Coe, NE cor. SE SW SE Section 13-1n-1w, Benoist sand at 1,366-70 feet, pumped 22 bbls. Adams Oil & Gas Co. No. 3 Coe, SE cor. SW SE Section 13-1n-1w, Benoist at 1,362-76 feet, pumped 20 bbls. G. N. Moore and others No. 1 Leicht, Benoist top at 1,515-29 feet, water, total depth 1,529 feet, abandoned.

In Lawrence County, Kitcher & Wilson No. 1 Ackman, C E half SE SE Section 19-3n-11w, McClosky lime at 1,850-54½ feet, total depth, acidized with 1,700 gallons, and then with 2,000 gallons, pumped 15 bbls. of oil and 30 bbls. of water. In the South Russellville gas field, Kentucky Natural Gas Co. 1 Carpenter & White, C SW SW Section 7-4n-10w, Buchanan sand at 1,080-1,100 feet, 15,250,000 feet of gas. Herbst and others No. 1 Shaw and Gee, C SW SW Section 12-4n-11w, hole full of water in Buchanan sand at 1,132-58 feet, dry and abandoned. Hefkin & Willis No. 1 Citizens Trust Co. C NW NW Section 13-4n-11w, Buchanan at 1,111-28 feet, 3,500,000 feet of gas. Kesl and others No. 2 Scott Gray, C N half NE NE Section 13-4n-11w, Buchanan at 1,077-80 feet, 21,592,000 feet of gas with 425 pounds rock pressure.

In Bond County, J. E. Huppard and others No. 1 Dresser, NW cor. NE NW Section 21-6n-4w, a showing in the Niagara lime at 1,810-30 feet was acidized with 1,000 gallons and then with 3,000 gallons pumped 78 bbls. in 3 days, then pumped 25 bbls. of fluid in 24 hours, 40 per cent water.

In Clark County, Lee Warner No. 2 Eckard, NE NW SW Section 34-11n-14w of second meridian, sand at 285-95 feet, shot with 20 quarts, pumped one-fourth barrel.

In Williamson County, Geological Oil Syndicate No. 1 Scott, SW SE SW Section 4-10s-2e, dry and abandoned at 2,100 feet.

In Jefferson County, W. C. Allen No. 1 Puckett, NE NW NW Section 12-3s-2e, McClosky lime at 2,812 feet, dry and abandoned at 2,822 feet. Dr. More and others No. 1 Novak, SW NE SW Section 28-2s-1e, Roseclaire top at 2,200 feet, total depth 2,264 feet, dry and abandoned.

In Wayne County, Sloan & Allen and others No. 1 Cox, SE SE SE Section 8-3s-9e, pay at 3,465-75 feet, swabbed and flowed 309 bbls. in 35 hours. H. H. Weinert No. 4 Morlan C, NE SW SE Section 28-2s-7e, pay at 3,308-20 feet, swabbed and flowed 40 bbls. of oil and 100 bbls. of salt water. H. H. Weinert No. 5 Morlan A, NE SW NE Section 33-2s-7e, McClosky pay at 3,322-31 feet, flowed 240 bbls.

In Jefferson County, Joe Aylward No. 1 Sanders, SE NE SW Section 28-1s-2e, McClosky lime at 2,233-38 feet, no saturation, dry and abandoned. A. J. Walker No. 1 Pace Heirs, NE NW NE Section 36-1s-2e, dry and abandoned at 2,578 feet. Benoist sand was topped at 2,261 feet.

Marion County

In Marion County, Dixie Oil Co. No. 1 Gerbig, NW NW NW Section 19-1n-1e, total depth 1,380 feet, temporarily abandoned. It had been shot with 40 quarts in Benoist sand at 1,362-80 feet. The Texas Co. 5 City of Centralia land, SW cor. NE NW NW Section 4-1n-2e, Benoist sand at 1,784-88 feet, temporarily abandoned. It is an oil well and will be produced later. The Texas Co. No. 3 Kalkbrenner, SW NW SE Section 5-1n-2e, Benoist at 1,732-73 feet, flowed 396 bbls. through 1-inch choke. Texas No. 1 Bundy, SE NW NE Section 6-1n-2e, Aux Vases at 1,804 feet, saturation at 1,810-26 feet, flowed 70 bbls. through quarter-inch choke. Ohio Oil Co. No. 4 Murray, SE SW SE Section 7-1n-2e, Benoist at 1,820-54 feet, pumped 75 bbls. Texas No. 3 Fyke, NW SE SW Section 8-1n-2e, Benoist at 1,810-45 feet, shot with 40 quarts, flowed 295 bbls. in 14 hours through 1-inch choke. Texas No. 1 Hawkins, NW cor. NE NE NW Section 8-1n-2e, Benoist at 1,755-87 feet, flowed 341 bbls. in 18 hours through 1-inch choke.

Richland Corp No. 1 Beach, SW NW NW Section 1-2n-1e, dry and abandoned at 2,131 feet. McClosky lime topped at 2,090 feet. Haynes & Thomas No. 1 Wallis, SE NE NE Section 36-2n-1e, McClosky at 2,076 feet, acidized with 1,000 gallons, pumped 112 bbls. in 13½ hours.

In the Salem field Kingwood Oil Co. and Bell No. 1 J. A. Shanafelt B, NW SW NW Section 16-2n-2e, McClosky top at 2,164 feet, water at 2,207-16 feet, total depth 2,256 feet, abandoned. Max Pray No. 2 A. M. Cole, SE NW SE Section 16-2n-2e, Benoist at 1,830-70 feet, flowed and pumped 195 bbls. Texas Co. No. 5 Jett, SW SE SW Section 16-2n-2e, Benoist at 1,808-50 feet, flowed 120 bbls. Texas No. 2 Jett, NW SW SW Section 16-2n-2e, Benoist at 1,812-50 feet, flowed 250 bbls. W. R. Curry No. 1 J. W. Young, NW cor. NE NE SE Section 20-2n-2e, Benoist at 1,758-90 feet, flowed 300 bbls. Ohio Oil Co. No. 4 Mathew Young Heirs, SW NE SW Section 20-2n-2e, Benoist at 1,796-1,833 feet, pumped 90 bbls. Texas No. 5 Young, SW cor. SE SE NE Section 20-2n-2e, Benoist at 1,760-94 feet, flowed 300 bbls. (estimated), Magnolia Petroleum Co. No. 7 Chitwood, NW NW SE Section 21-2n-2e, Benoist at 1,844-76 feet, shot with 40 quarts, flowed 120 bbls. Magnolia No. 9 D. A. Shanafelt, NW NE NW Section 21-2n-2e, Benoist at 1,813-35 feet, shot with 40 quarts, flowed 720 bbls. Magnolia No. 17 J. H. Young, NW SE SW Section 21-2n-2e, Benoist at 1,793-1,844 feet, flowed 520 bbls. The Texas Co. No. 3 F. Lee, SE cor. NW SE SW Section 28-2n-2e, Benoist at 1,738-75 feet, flowed 80 bbls. through 23/64-inch choke. Texas Co. No. 2 Stroup, NW cor. SW SE SW Section 30-2n-2e, McClosky at 2,027 feet, pay at 2,028-38 feet, flowed 310 bbls. through 1-inch choke. Vermillion Oil Co. No. 1 Ryan, SE SE NW Section 30-2n-2e, Fredonia top at 2,115 feet, total depth, dry and abandoned. Sheppard No. 3 Greer, NE cor. SW NE SW Section 30-2n-2e, McClosky at 2,052 feet, total depth 2,074 feet, acidized with 1,000 gallons pumped 284 bbls. of oil with some water. Texas Co. No. 3 C. H. Reed B, SW cor. NW NW SE Section 31-2n-2e, Benoist at 1,734-87 feet, flowed 450 bbls. (estimated). Texas No. 2 Richardson, SW SW SW Section 32-2n-2e, Benoist at 1,641-88 feet, flowed 600 bbls. Texas No. 1 Hays, NE NW NE Section 32-2n-2e, Benoist at 1,649-1,710 feet, flowed 342 bbls. Texas No. 7 Wayman, NW NW NW Section 32-2n-2e, Benoist at 1,644-88 feet, flowed 575 bbls.

In Patoka, Robin H. Brian trustee, No. 5 Nattier Heirs, NE cor. NW SW SE Section 29-4n-1e, Benoist at 1,417-40 feet, shot with 60 quarts, pumped 90 bbls.

Fayette County

In Fayette County, Mylius and others No. 1 Feezel, SE NE SW Section 8-6n-3e, was drilled to 2,001 feet and after a Halliburton test was temporarily abandoned. McClosky lime was topped at 1,985 feet. Kingwood & Duncan No. 8 Yolton, SW SE NE Section 12-7n-2e, Weiler sand at 1,556-67 feet, shot with 5 and then with 10 quarts, pumped 40 bbls. in 9 hours. Papoose Oil Co. No. 1 Dycus, NW NE SW Section 18-7n-2e, McClosky at 1,920-25 feet, total depth 1,970 feet, dry and abandoned. Magnolia Petroleum Co. No. 14

Illinois Fields

HIGHLIGHTS OF THE WEEK: Gulf Oil Corp. is reported to have added 150,000 acres to its already large holdings in Illinois, Indiana and Western Kentucky, acquiring the acreage by purchase from Nollem Oil & Gas Co. Another Illinois production record was made in the past week.

Daily production of new pools, 104,887 bbls.; old pools, 10,990 bbls.; total, 115,877 bbls.

Completed oil wells, 66; operations including locations, rigs up and wells drilling, 564.

Clow, NW SW NE Section 5-7n-3e, Benoist at 1,530-60 feet, flowed 131 bbls. Magnolia Petroleum Co. No. 15 Clow, NE SW NE Section 5-7n-3e, Benoist at 1,554-86 feet, flowed 194 bbls. Carter Oil Co. No. 2 Edith Quade, NW SW SW Section 6-7n-3e, Weller sand at 1,438-78 feet, shot with 40 quarts, pumped 180 bbls. (estimated). Carter No. 3 Oma Ferguson, NW SW SW Section 7-7n-3e, Weller at 1,501-44 feet, shot with 20 quarts, swabbed 288 bbls. Carter No. 2 Thornton, SW NE NW Section 7-7n-3e, Weller at 1,503-53 feet, shot with 20 quarts, swabbed 35 bbls. Sam Hunt No. 2 Owens, SE NW NW Section 8-7n-3e, stray sand at 1,481-86 feet and Benoist at 1,497-1,520 feet, flowed 400 bbls. (estimated). C. F. Steele No. 2 Arnold, NW cor. SW SW Section 8-7n-3e, Weller at 1,410-73 feet, shot with 75 quarts pumped 100 bbls. (estimated). Carter Oil Co. No. 2 Harper, SW NW SW Section 17-7n-3e, Weller at 1,482-1,528 feet, shot with 20 quarts swabbed 64 bbls. Carter No. 4 Ola Harper, SW SW SW Section 17-7n-3e, Weller at 1,492-1,535 feet, shot with 20 quarts, pumped 67 bbls. Carter No. 4 Emma McCormick, NE NW SE Section 18-7n-3e, Weller at 1,493-1,522 feet swabbed 100 bbls. Carter No. 3 McCormick, NE SW SE Section 18-7n-3e, shot with 20 quarts at 1,533-41 feet, swabbed 48 bbls. Dixie Oil Co. No. 2 Arnold B, S half SW NW NE Section 19-7n-3e, Weller at 1,484-1,529 feet, shot with 60 quarts, pumped 380 bbls. Carter Oil Co. No. 2 Sidener, NE SW SE Section 19-7n-3e, Weller at 1,531-77 feet, shot with 20 quarts, swabbed 234 bbls. through casing. Carter No. 3 Morrison, NE NE NE Section 19-7n-3e, Weller at 1,475-1,517 feet and Bethel at 1,576-84 feet shot with 60 quarts at 1,482-1,529 feet, pumped 160 bbls. Dixie Oil Co. No. 2 Arnold A, SW cor. NW SE Section 19-7n-3e, Weller at 1,569-80 feet, pumped 102 bbls. Williams and others No. 4 Smith, SE NW SE Section 20-7n-3e, Weller at 1,536-71 feet, pumped 205 bbls. in 12 hours. Williams and others No. 2 Smith, NW SW SE Section 20-7n-3e, Weller at 1,555-83 feet, pumped 200 bbls. (estimated). Williams and others No. 1 Smith, SW SW SE Section 20-7n-3e, Benoist at 1,664-90 feet, plugged back to 1,661 feet and produced through perforations at 1,630-37 feet, 1,641-48 feet and 1,653-78 feet, pumped 15 bbls. of oil and 15 bbls. of water. Williams and others No. 3 Smith, SW NW SE Section 20-7n-3e, Weller at 1,534-70 feet, pumped 230 bbls. J. E. Mabee No. 1 Homan, SW SE NE Section 29-7n-3e, Weller at 1,536-62 feet, pumped 20 bbls. of oil and pumped off, shut in 14 hours and then pumped and made 150 bbls. Shell Petroleum Corp. No. 1 Milliser, SW NE NE Section 29-7n-3e, Weller at 1,538-74 feet, pumped 75 bbls. in 10 hours, then was shut in. Shell No. 2 Milliser, NW NE NE Section 29-7n-3e, Weller at 1,534-75 feet pumped 136 bbls. in 15 hours. J. E. Mabee No. 2 Homans, NW NE SE Section 29-7n-3e, Weller at 1,552-90 feet, swabbed 600 bbls. Carter Oil Co. No. 3 Phyllis Reece, NE SW SE Section 30-7n-3e, Weller at 1,531-63 feet, pumped 178 bbls. Texas Co. No. 2 Philbrook, NE cor. NW SE Section 31-7n-3e, Weller at 1,547-59 feet, pumped 100 bbls. (estimated). Carter Oil Co. No. 1 Joe Hoffman, NW SW SW Section 1-8n-3e, Bethel sand at 1,573-87 feet, shot with 10 quarts, pumped 115 bbls. Carter No. 1 State Bank, SE SW SE Section 10-8n-3e, shot at 1,570-83 feet, pumped 61 bbls. Carter No. 3 Reed, SE SW SE Section 11-8n-3e, Weller sand at 1,425-61 feet, shot with 80 quarts, flowed 540 bbls. Carter No. 1 Wellman, NW NE NW Section 14-8n-3e, Bethel sand at 1,497-1,510 feet, shot with 20 quarts, pumped 300 bbls. (estimated). Carter Oil No. 2 Cline, NE NW SE Section 14-8n-3e, Weller at 1,504-32 feet, shot with 50 quarts, flowed 230 bbls. (estimated). Carter No. 2 Wright, SW SW NE Section 20-8n-3e, Bethel at 1,470-95 feet, shot with 40 quarts, pumped 300 bbls. Carter Oil No. 2 Hupper, NE NE SW Section 27-8n-3e, Bethel at 1,568-91 feet, shot with 30 quarts, pumped 130 bbls. Carter Oil Co. No. 1 Cummings, SW NE SE Section 32-8n-3e, Bethel at 1,532-53 feet, shot with 40 quarts, flowed 459 bbls. Carter No. 2 Dial, SE SE NE Section 33-8n-3e, Bethel at 1,580-91 feet, shot with 10 quarts, pumped 117 bbls.

In Jasper County, Borah and others No. 1 Vannetta, SE SE NW Section 30-8n-10e, was dry and abandoned at 2,693 feet, Fredonia lime was topped at 2,617 feet.

In Clay County, Pure Oil Co. No. 4 Fearn, C W half NW SE Section 22-1n-7e, McClosky pay at 3,125-42 feet, flowed 333 bbls. of oil and 325 bbls. of water through perforations at 3,125-27 feet. Pure No. 1 Johnson, C E half NE SW Section 27-1n-7e, pay at 3,117-19 feet and 3,121-30 feet, acidized with 3,000 gallons through perforations at 3,138-43 feet, flowed 222 bbls. through 11/64-inch choke. Pure Oil Co. No. 1 Hupble, C W half NW SE Section 4-2n-8e, pay at 2,958-3,010 feet, at intervals, acidized with 5,000 gallons, pumped 157 bbls. Pure No. 2 Shipman, C W half NE NE Section 5-2n-8e, pay at 2,967-3,065 feet, at intervals, flowed 578 bbls. Kingwood Oil Co. No. 2 Graham, NE SW NE Section 13-3n-6e, pay at 2,962-72 feet, acidized with 1,000 gallons, pumped 85 bbls.

9 New Oil Wells, 7 Gas Wells and 8 Dry Holes in Kentucky

OWENSBORO, Ky., Dec. 12. — Two 150-bbl. wells and a dry hole were recorded in the Birk City pool of Henderson and Daviess counties in the past week. A 75-bbl. well from Jett sand completed in the Easton district of Hancock County was a feature of the week's work. Following were the completions and new operations reported from the various areas in Western Kentucky during the week:

Butler County, Silver City district: Fred Phillips and Porter Evans No. 4 J. D. Brown, 5-bbl. well in Jones sand, total depth 412 feet; Anna K. Wilson & Co. No. 2 T. Clements, spudding in; Barnsdall Oil Co. No. 2 Martha Haws, spudding in.

Daviess County, Habit district: Henry & Ross No. 1 Robert Camp, spudding in; E. R. Robinson No. 1 P. O. Taylor, rigging up. Oklahoma district: H. M. Hunt and others No. 2 W. S. Howard, location. Whitesville district: Fordsville Oil Co. No. 3 J. A. Coomes, 10-bbl. well in Jett sand. Birk City district: Bailey, Bond & Hays No. 3 R. M. Hagan, 150 bbls., total depth 1,892 feet; Jess Ashby and others No. 4 Mrs. C. E. Jagoe, rigging up; Major Oil Co. No. 1 W. J. Mulligan, dry hole, total depth 1,880 feet; Major Oil Co. No. 2 Prudential Life Insurance Co., Brown tract, cored McClosky lime, total depth 1,890 feet; No. 3 spudding in. Cane Run School district: Cumberland Petroleum Co. No. 5 J. Hayden, spudding in; Cane Run Petroleum Co. No. 9 R. E. Jackson, spudding in.

Hancock County, Easton district: Eureka Drilling Co. No. 3 Baker Brothers, moving in; Chester Oil Co. No. 16 J. W. Baughan, drilling at 100 feet; J. C. Ellis No. 10 Hallie Mason, 75-bbl. well in Jett sand; J. C. Ellis No. 11 Mason, moving in.

Henderson County, Hebbardsville district: J. A. Shoemake and others No. 1 Otto Busby, dry hole, total depth 2,183½ feet. Birk City district: Aetna Oil Service Corp. No. 5 C. A. Dempewolf, 150-bbl. well, total depth 1,890 feet. Reed district: Cumberland Petroleum Co. and others No. 1 J. T. Griffith, 5-bbl. well, total depth 1,924 feet.

McLean County, South Livermore district: Marhill Oil & Gas Co. No. 2 Hollis Howell, dry hole through Jett sand. Cleopatra district: Cleopatra Oil Co. No. 1 J. B. Moseley, dry hole, total depth 820 feet. Livia district: W. Chenalt and others No. 1 Jess Niceley, dry hole, total depth 1,480 feet.

Ohio County, Maxwell district: J. H. Wilson No. 3 G. E. Barr Estate, dry hole, total depth 1,407 feet. Adaburg district: Nollem Oil & Gas Co. No. 12 Vincent Crowe, 20-bbl. well, Jett sand, total depth 621 feet. Narrows district: McLaughlin & Mann No. 4 T. P. Fentress, moving in; W. E. Hupp and others No. 1 Oscar Schultz, dry hole, total depth 800 feet. Fordsville district: W. E. Neal and others No. 2 R. J. Roberts, 85 acres, spudding in. Oklahoma district: Lewis, Lang & Snyder No. 1 C. T. Westerfield, 10 acres, 5-bbl. well in Jett sand, total depth 674 feet; Henry Scholl and others No. 5 Oscar Westerfield, 10-bbl. well in Jett sand, total depth 709 feet.

Union County, Chalybeate Spring district: Kentucky Natural Gas Co. and Sun Oil Co. No. 1 Matilda Mills, dry hole, total depth 2,246 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Dec. 12.—Seven gas wells but no oil wells were listed as completions in the past week's report of operations in Eastern Kentucky. Drilling is at a standstill in some of the districts, including the Stillwater district, in Wolfe County; Busseyville-Fallsburg district, in Lawrence County; Elliott County areas; Burton-Oil Springs district, in Magoffin County, and Burning Fork district, in Magoffin County, which all report "no operations," while Keaton district, Lawrence County, reports no rigs running.

The seven new gas wells are as follows:

The Mountain Oil & Gas Co. No. 1, O. T. Alley land, at Blackberry in Pike County, total depth 3,600 feet, in shale, gauged 238,000 feet of gas daily.

Huntington-Oklahoma operators report the completion of No. 1 Brewer & McCoy on Tug Fork in Martin County, total depth 3,475 feet, in shale, with a production of 84,000 feet of gas daily.

George W. Hale and others completed No. 1 Hobart Evans and J. B. Stepp, on Lackey Branch in Martin County, at a total depth of 2,980 feet, in shale, with flow of 133,000 feet of gas daily.

James Webb and others completed No. 1 Bertha Spears, on Laurel Fork in Martin County, at a total depth of 2,618 feet, in shale, with a completed log in of 30,000 feet of gas daily.

Fred Williams completed No. 4 Stanley Heirs, on Mare Creek in Floyd County, at a total depth of 2,710 feet, and a production of 252,000 feet of gas daily.

Shewey, Hale & Ware No. 774 Curtis Irington and others (Stepp Heirs) land, on Davis Branch in Martin County, was completed at a total depth of 1,034 feet, in Maxon sand, with a flow of 879,000 feet of gas daily.

O. A. Spears completed No. 2 York & Ratliff, on Tug Fork in Martin County, at a total depth of 3,032 feet, in shale. It was good for 220,000 feet of gas per day.

Drilling Progress

In Floyd County, Harris Oil & Gas Co. was drilling at 500 feet in No. 1 George Honaker, on Camp Branch. Penn Fitzpatrick was drilling at 300 feet in No. 1 Stephen Fitzpatrick, on Middle Creek. Warfield Natural Gas Co. was down 850 feet in No. 4819, W. R. Wells and others land, on Johns Creek. The same firm had reached the 350-foot level in No. 4820, W. R.

(Continued on Page 91)

Wildcat Progress

In Bond County, Thornwell Drilling Co. No. 1 Morris, NW NW NW Section 16-6n-3w, was drilling at 350 feet; Lindsay Brothers and British American Oil Co. No. 1 Fruitiger, C SW SW SW Section 33-4n-4w, drilling at 710 feet; Joseph Kesl and others No. 1 White, SE SE NW Section 17-5n-4w, spudded; Devonian Oil Co. No. 1 Ambrell, NE SW NW Section 22-6n-4w, drilling at 457 feet.

In Champaign County, Sidney Oil & Gas Co. in SE NE SE Section 10-17n-10e, was drilled to 152 feet and shut down.

In Clay County, Richard Duncan No. 1 Liggett, SE NW SE Section 17-5n-5e, was drilling at 1,585 feet.

In Coles County, Ed Swearer and Crown Petroleum Co. No. 1 Sanders, SE SE NW Section 27-13n-8e, drilling at 2,110 feet.

In Cumberland County, Paul Henshaw and others No. 1 Rea, SE SE SW Section 18-10-9e, drilling at 1,760 feet.

In Edwards County, Leach Brothers No. 1 A. D. Lee, SW NE SE Section 11-1s-10e, was drilling at 4,105 feet. There was a showing of oil and gas at 4,095 4,101 feet.

In Fayette County, American Seismograph Co. No. 1 Bolts, NE SW SW Section 16-5n-1e, was shut down for orders at 1,656 feet. Benoist sand was topped at 1,610 feet.

In Gallatin County, Bailey & Lucas No. 1 Logan, SW cor. SE NE NE Section 21-8s-8e, shut down at 1,575 feet, with the hole full of water.

In Jefferson County, Benedum & Trees No. 1 Interstate Coal Co., NE NE SW Section 9-4s-2e, was shut down at 2,931 feet. The hole will be reconditioned and drilled to 5,000 feet if necessary to make a thorough test of the formations. Beaver and others No. 1 Eichman, NE cor. Section 28-2s-1e, was drilling at 2,060 feet.

In Jackson County, W. R. Hays No. 1 Bouchet, NE

(Continued on Page 90)

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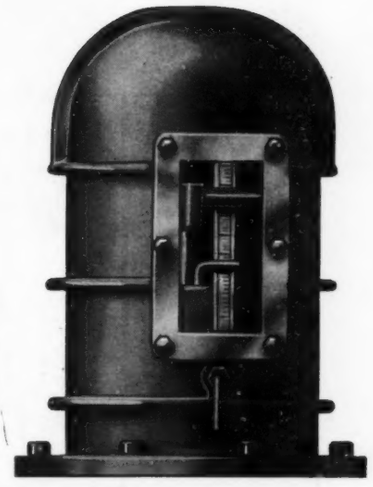

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Golden Meadows, Louisiana, Opens With a 638-Bbl. Well

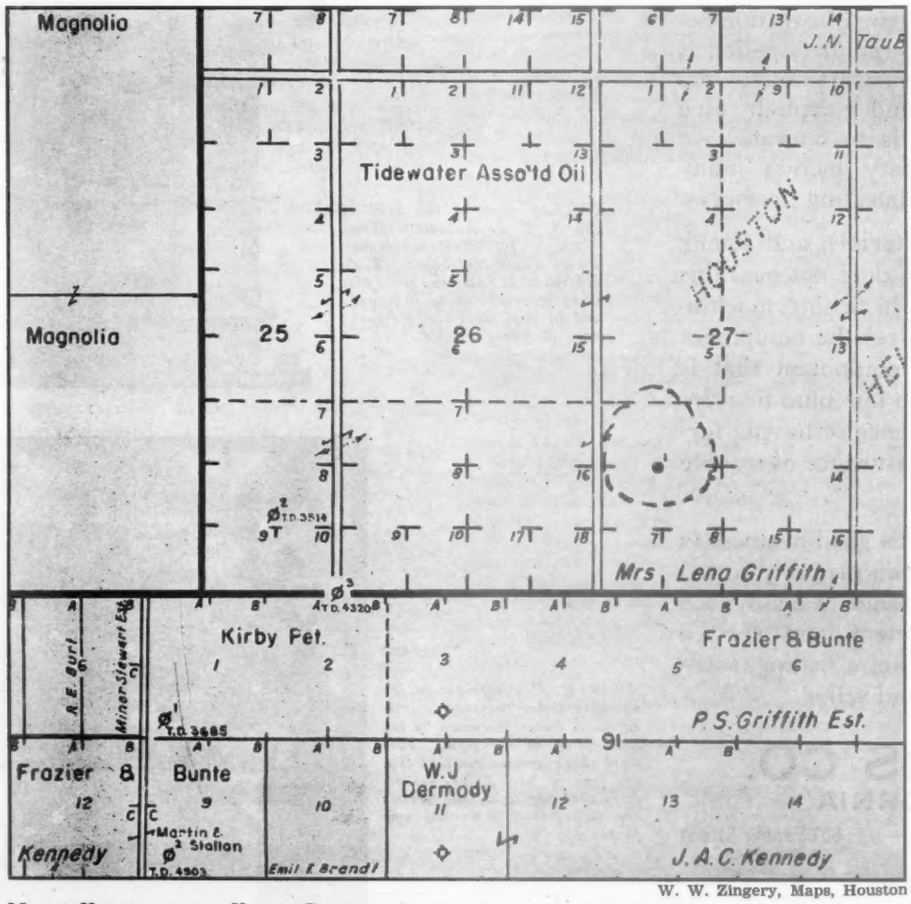
HOUSTON, Tex., Dec. 12.—The Golden Meadows prospect in La Fourche Parish, coastal Louisiana, was added to the list of producing fields as Texas Co. No. 1 La Terre, Section 1-20s-21e, flowed 638 bbls. of 37.4-gravity oil daily through a quarter-inch choke under a tubing pressure of 2,350 pounds. Production is from Miocene sand through perforated casing at 8,500-20 feet. The well has been in process of completion for several weeks. The hole was drilled to a total depth of 11,135 feet, and the first test at 9,975-10,005 feet showed distillate. Additional tests at 9,265-90 feet and at 8,850-70 feet showed salt water and gas. Additional sands, showing oil and gas, are reported to have been logged up the hole from the present producing depth. This prospect was considered one of the most promising areas in the district. It is near the town of Golden Meadows and was located by geophysical shooting in 1936. Northwest of the discovery, about 2 miles, the company has started drilling No. 1 Louisiana Land & Exploration-Golden Meadows in Section 77-19s-21e.

Shell Petroleum Corp. No. 1 Hazel Burdin, the discovery well of the West Lake Verret field, St. Martin Parish, was washed in through perforated casing at 8,017-20 feet, and is flowing 720 bbls. of fluid per day of which 273 bbls. is 38-gravity oil and the balance salt water. The well is flowing through a quarter-inch choke under a tubing pressure of 755 pounds and casing pressure 1,400 pounds. A salt water disposal well has been drilled to take care of the water and the well will not be recompleted. Location has been made for No. 2 Jeanerette, an east offset to the discovery in Section 14-14s-12e.

Extend Bancroft Field

The Bancroft field, Beauregard Parish, was extended a half mile east as George E. Lilly and others No. 1 W. K. Rice, Section 15-6s-13w, was being completed. The main sand was topped at 7,326 feet, and cored to a total depth of 7,338 feet. Seven-inch casing was cemented at 7,326 feet. This well is on a three-acre lease and is the first well to be drilled in the field other than by Republic Production Co. The latter company's No. 3 Columbia Land & Timber Co., Section 16-16s-13w, flowed 130 bbls. per day through an eighth-inch choke from sand at 7,238-92 feet, the total depth.

Superior Oil Co. and Pure Oil Co. No. 3 State-Gulf of Mexico, offshore from Cameron Parish, flowed 387 bbls. of 34.4-gravity oil per day through a 12/64-inch choke. The well is producing from sand topped at 5,247 feet, and cored to 5,267 feet, the total depth. This is the third oil well in the field.



W. W. Zingery, Maps, Houston

Mount Houston area, Harris County, showing location of Jack Frazier and others No. 1 Griffith which was showing for a pool opener at 4,073-77 feet and then quit flowing. Efforts to revive it have been unsuccessful

In the Lafitte field, Jefferson Parish, Carter-Perrin & Brian No. 1 Lucien Adams, 1½ miles northeast of the Lafitte field, Jefferson Parish, was abandoned at 10,212 feet, with no showings of oil or gas reported. This is the first dry hole to be drilled.

In the Lake Long field, La Fourche Parish, Fohs Oil Co. No. 6 State was recompleted through perforated casing at 9,356-62 feet, for an initial production of 242 bbls. per day through a 12/64-inch choke. On the Chacahoula salt dome, Sun Oil Co. No. 3 Dibert-Stark and Brown Cypress Co. is flowing an estimated 10 to 12 bbls. of pipe line oil per hour as it cleans out from sand at 7,264-69 feet. The hole is bottomed at 7,275 feet, with 7-inch casing cemented on bottom. This is the second producer to be completed on the dome which received its first producton a few months ago.

North Tepetate

Atlantic Refining Co. was preparing to complete No. 2 Klumpp as the second producer in the North Tepetate field, Acadia Parish. The hole is bottomed in broken sand and shale at 8,655 feet with 7-inch casing cemented at 8,654 feet. Sand with an oil and gas odor was logged at 8,457-8,518 feet. Due south of the field and located in the Tepetate field, Continental Oil Co. opened production from a deeper sand as No. 1-A Homeseekers Development Co., Section 29-7s-2w, flowed 154 bbls. of 33-gravity oil per day through a 5/32-inch choke with tubing pressure 2,275 pounds and casing pressure 1,100 pounds. This well was originally completed in the discovery horizon at approximately 8,300 feet, and was deepened to a total depth of 9,447 feet. Sand showing oil was logged at 9,165-83 feet, and the hole was plugged back to 9,220 feet and the well was completed through perforated casing at 9,165-73 feet. The discovery may result in a general deepening campaign throughout the field.

On the Henderson salt dome, St. Martin Parish, Texas Co. No. 11 St. Martin Land Co., Section 21-8s-7e, was shut down waiting on orders after it failed to flow from a screen setting at 8,060-65 feet. On a drill stem test last week the well showed evidence of production.

In the St. Gabriel area, Iberville Parish, location for an interesting wildcat was made by Shell Petroleum Corp. for No. 1 Natalbany Lumber Co. in Section 18-9s-2e.

Along the Texas Coast, Jack Frazier and others No. 1 Griffith which last week appeared to be opening a new field for the Mount Houston area, Harris County, now looms as a failure as several attempts to get the well to flow have failed. The well was tested last week through perforated casing at 4,073-77 feet, but before it could clean itself, salt water broke in and the well went dead. The perforations were squeezed off and the casing reperforated at 4,070-77 feet, and on an 11-hour drill stem test with packer set at 4,044 feet, it tested a slight blow of gas and recovered 720 feet of fluid of which 75 per cent was oil and the balance mud. The casing may be reperforated later. The well was drilled to the Yegua at a total depth of 8,348 feet, and was plugged back to test the Frio sand. Should the well be abandoned additional development is expected to be started in the near future.

One-half mile due west of the discovery well of the League City field, Galveston County, George Echols No. 1 Security Investment Co. was flowing into the pit, making an estimated 10 to 12 bbls. of pipe line oil per hour through a quarter-inch choke under a tubing and casing pressure of 975 pounds. The well is producing through perforated casing at 9,062-94 feet, which is slightly higher than the discovery well.

Fusion welded
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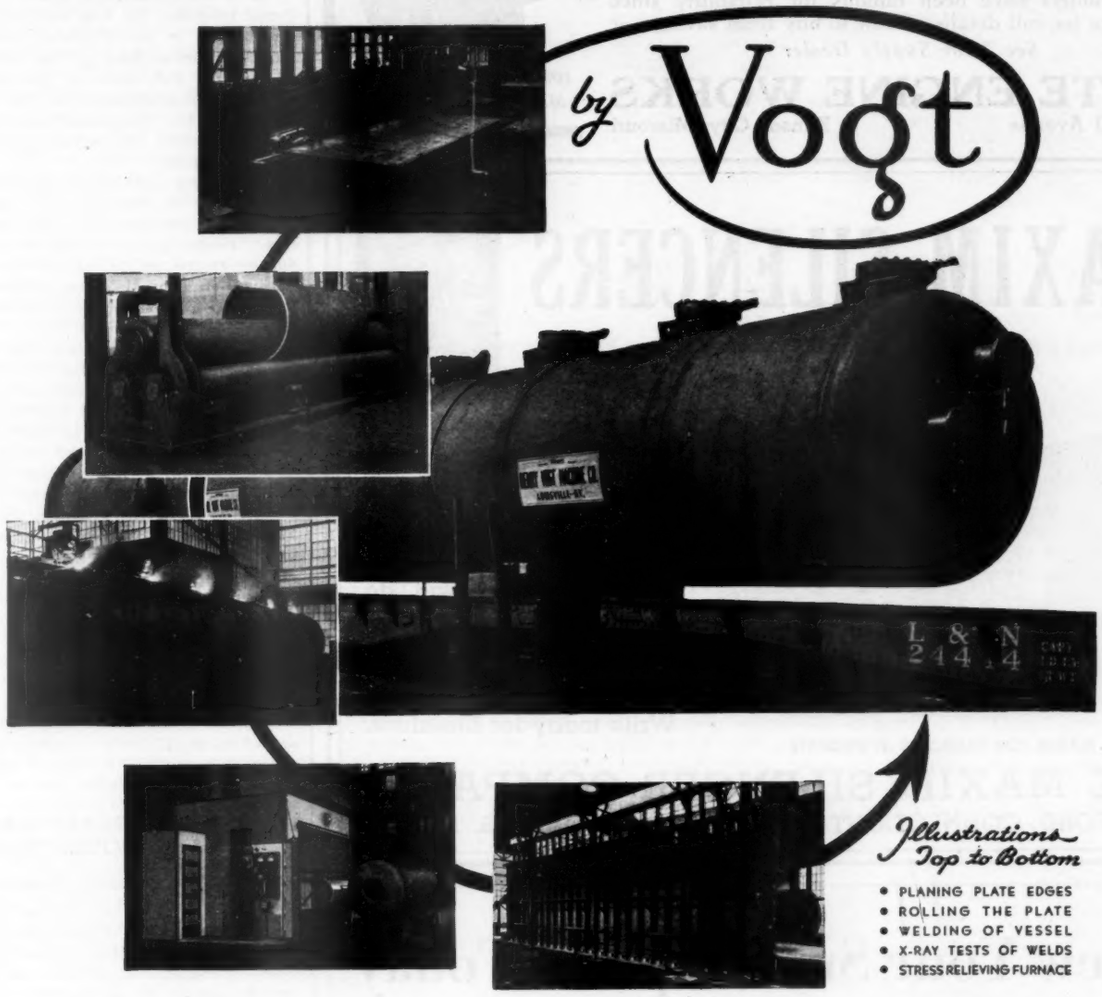
by Vogt



Illustrations Top to Bottom

- PLANING PLATE EDGES
- ROLLING THE PLATE
- WELDING OF VESSEL
- X-RAY TESTS OF WELDS
- STRESS RELIEVING FURNACE

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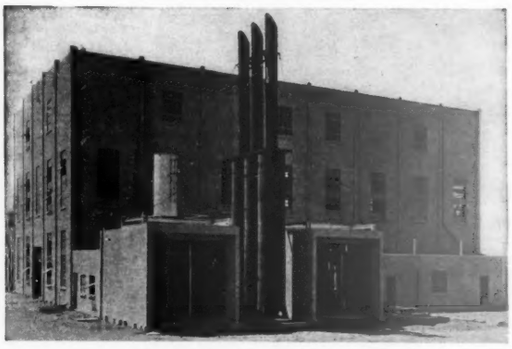

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MARSH GAUGES

Phillips Petroleum Co. staked location for its second test, being No. 1 Stewart Title Guaranty Co., northwest of the discovery well in the S. F. Austin Survey. Midstates Oil Co. No. 1-A Maco Stewart, half mile east of the discovery, is drilling below 9,233 feet. Several sands are reported to have been logged, but the hole is being carried deeper in the hope of picking up another sand.

Sun Oil Co. No. 1-A Lutcher Moore in the Echo area, Orange County, has attracted much attention as the well attempted to blow out and it took several hours to bring the well under control. The blowout occurred while bits were being changed at a total depth of 8,945 feet. At this depth 4 feet of sand had been logged. The well is located north of the town of Orange in the B. Johnson Survey.

In the same county and located in the Orange field, Union Producing Co. was attempting to test a new sand logged in No. 3 Lutcher Moore Lumber Co., on the northwest flank of the dome. Sand showing oil and gas was logged at 5,805-43 feet, but when the section showed salt water, the hole was plugged back and a test was scheduled to be made at 5,575-5,620 feet, where an electrical survey showed favorable indications.

New drilling activity was reported from the Rosslyn area, east of the Fairbanks field, Harris County, following the completion last week of a good well by Union Producing Co. On the Fritz Warneke lease, Sinclair Prairie Oil Co. was scheduled to spud No. 2 Goodykoontz, a north offset, while Housh & Thompson staked location for No. 1 Yerkes, a south offset in the Sam Lewis Survey.

The deep sand at the Segno field, Polk County, was extended to the east as Gulf Oil Corp. No. 4 Ragan, I.&G.N. Survey No. 15, flowed 609 bbls. daily through a quarter-inch choke. The hole is bottomed at 8,083 feet with oil sand logged at 8,972½-80 feet.

Tide Water Associated Oil Co. No. 1 Roy, a west outpost test in the Eureka field, Harris County, is bottomed at 7,648 feet, with a showing of gas in sand at 7,609-29 feet. The Cockfield was found at 7,479-7,505 feet and the Discorbis Yeguaensis at 7,591-7,609 feet. The well is about 1,500 feet northwest of the same company's No. 1 H. H. Ford, a dry hole. In the same county and located one-half mile south of the South Houston field, Smith & McDannald No. 1 Molk, was abandoned in heaving shale at 7,979 feet.

Locations for two interesting wildcats were made. West of Palacios, Matagorda County, Sun Oil Co. has derrick up for No. 1 Cavallin, Section 13, T. F. Koch subdivision, in the John Duncan Survey, while northeast of the South Cotton Lake field, Chambers County, Moore & Ahern are moving in material for No. 1 E. Maley in the B. Winfree Survey.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Rowan Drilling Co. No. 9 Jamison, sand 2,192-2,201 feet, 72 bbls., three-sixteenths choke. John Atkinson No. 1 Basset-Blakely, 2,265 feet, abandoned. Hastings field: Stanolind Oil & Gas Co. No. 6 Froberg, perforated casing 6,044-78 feet, 504 bbls., quarter-inch choke. West Columbia field: Texas Co. No. 29 W. H. Abrams, 5,575 feet, 529 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 37 A. D. Middleton, 7,080 feet, 600 bbls., quarter-inch choke.

Harris County

Eureka field: J. W. Frazier No. 2 Hogg, 7,762 feet, 236 bbls., quarter-inch choke. Fairbanks field: Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Munger, perforated casing 6,832-39 feet, 81 bbls., quarter-inch choke; No. 1 W. D. Ley, perforated casing 6,840-46 feet, 120 bbls., eighth-inch choke. Noble & Baker and others No. 2 Hillegeist, sand 6,835-52 feet, 652 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 24 Beamer, sand 5,621-6,046 feet, 600 bbls., quarter-inch choke; No. 8 Herman Hospital, sand 5,858-6,048 feet, 600 bbls., quarter-inch choke.

Liberty County

Hardin field: Fohs Oil Co. No. 1 A. B. Tompkins, perforated casing 7,591-7,600 feet, 428 bbls., quarter-

(Continued on Page 74)

California Field Report

By
L. P. STOCKMAN

Wells in Wheeler Ridge and Long Beach Draw Attention

LOS ANGELES, Calif., Dec. 12. — Two important wells, Richfield Oil Corp. No. 1 Kern County Land, in the Wheeler Ridge field, and De Soto Oil Co. deep test in the Lovelady section of the Long Beach field, are nearing the critical stage and the status of both is expected to be determined within another few days. The latter well, near Burnett and Gundry streets, in the town lot section of the Long Beach field, is bottomed in an oil sand at 10,156 feet. Swabbing for several days has failed to bring results as the well has only responded with a small flow. Plans are now under way to put the well on a gas lift and it may flow naturally after it has been on production a few days and the heavy mud removed from the hole. De Soto's well, the deepest hole drilled in the Long Beach field, is south of the Long Beach fault, and if substantial production is developed it will start a new development campaign. A 7-inch water string has been cemented at 9,745 feet and the hole was finished with 438 feet of 5-inch liner including 396 feet of 120-mesh perforations and 9,720 feet of 2½-inch tubing with a packer at 9,670 feet. The well has produced a small quantity of 29-gravity oil on the follow-up of the swab but does not appear to have sufficient kick to show large production. The well was drilled as a joint undertaking of several operators holding adjacent acreage. Due to the numerous and diversified interests involved it would be necessary to either pool holdings or grant deep zone rights on an acreage basis. The Long Beach field has the distinction of containing more crooked holes than any other district in the state. No one knows where the large majority of holes are bottomed, although practically every survey made in recent years has indicated that the drift from the vertical has been up structure. Apex Petroleum, Morton & Elder, Bolsa Chica Oil Co., Union Oil Co., General Petroleum Corp., Richfield Oil Corp., Thomas Kelly and others holding adjacent leases would be the primary beneficiaries of any important discovery by De Soto Oil Co. although it is not at all improbable that production would also be developed higher up on the structure and in the east and west end of the field.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

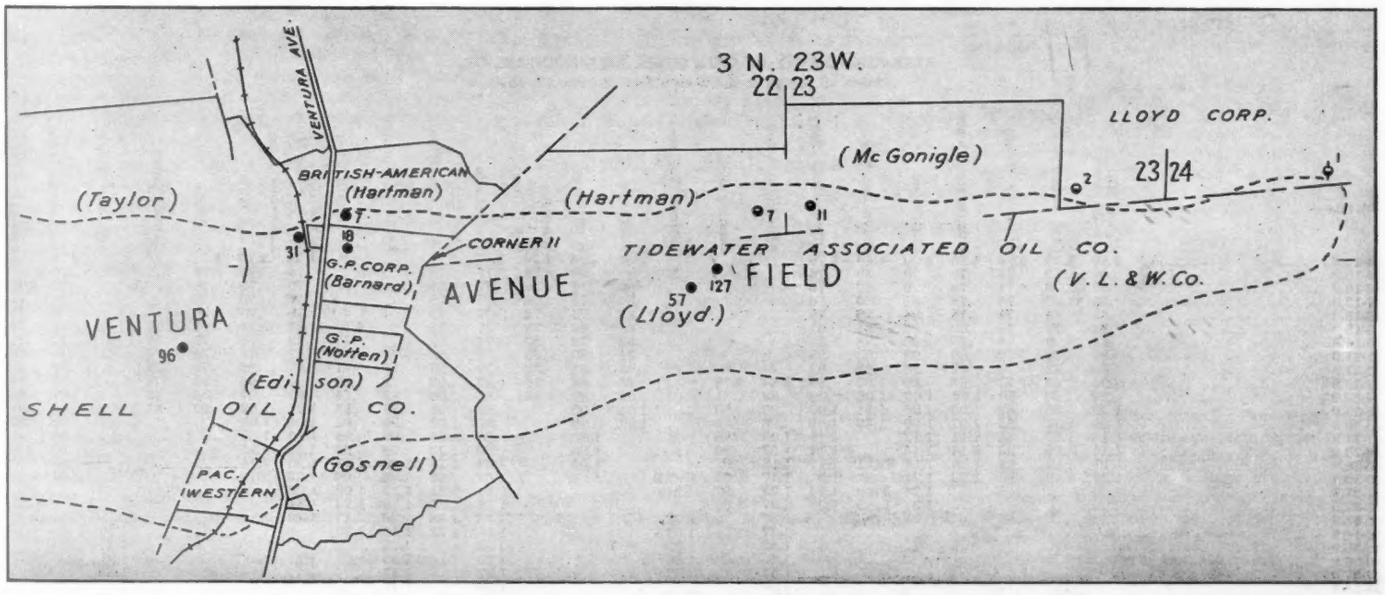
	December 3		November 26			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	71,211	10,173	.....	.....	924,037	129,788
Fuel oil	70,297	10,042	.....	.....	129,261	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	173,822	24,832	.....	.....	2,879,623	3,910,327
Kerosene	.....	.....	.....	.....	333,626	328,907
Foreign exports—						
Crude oil	316,499	45,214	372,613	53,230	20,076,511	14,859,855
Fuel oil	444,410	63,487	150,948	21,564	8,537,193	13,253,813
Diesel and gas oil	16,640	2,377	190,782	27,255	5,360,654	7,575,102
Gasoline	98,619	14,088	122,661	17,523	7,343,822	7,774,519
Kerosene	.....	.....	.....	.....	950,751	2,003,872
Asphalt	.....	.....	.....	.....	7,563	.....
Lubricants	.....	.....	.....	.....	175,560	12,984
Other unfinished oil	.....	.....	.....	.....	.....	1,028,732
Coastwise-domestic—						
Crude oil	233,850	33,407	130,313	18,616	10,663,583	5,416,341
Fuel oil	230,197	32,885	551,057	78,722	11,525,843	14,529,674
Diesel and gas oil	18,966	2,709	6,637	948	1,427,045	2,116,341
Gasoline	123,187	17,598	307,674	43,954	13,527,333	14,804,125
Kerosene	.....	.....	5,480	783	240,556	424,255

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	54,916	7,845	251,560	299,315
Gasoline	.....	.....	.....	.....	25,409	151,052
Kerosene	.....	.....	.....	.....	16,124	72,750
Asphalt	.....	.....	.....	.....	490,413	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports—						
Crude oil	.....	.....	37,879	5,411	4,778,370	3,233,170
Fuel oil	.....	.....	.....	.....	2,323,258	1,871,261
Diesel and gas oil	.....	.....	56,630	8,090	3,052,566	2,804,045
Gasoline	.....	.....	282,779	40,397	5,167,496	5,168,902
Kerosene	.....	.....	.....	.....	696,099	915,194
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	.....	.....	.....	.....	534,142	590,757
Coastwise-domestic—						
Fuel oil	196,418	28,060	109,612	15,659	6,051,300	6,063,265
Diesel and gas oil	22,605	3,229	35,818	5,119	1,459,191	1,360,827
Gasoline	146,809	20,973	133,465	19,066	7,249,105	5,696,136
Kerosene	13,512	1,930	38,714	5,531	611,259	393,308

De Soto Oil Co. has erected the necessary flow tanks, installed gas trap and made a welded pipe line connection to take care of anticipated production. The exact amount of oil sand present is unknown due to poor core recovery below 9,800 feet, but the formation logged in the bottom of the hole appears to be the most promising. The productivity of the 411 feet of formation open is expected to be known within a few days.

Richfield Oil Corp. appears to have found a new deep zone in the Wheeler Ridge field of Kern County. On a formation test at 8,518-713 feet the company recovered 75 stands of 40-gravity oil and gas-cut mud, of which about 50 stands contained crude oil indicating a possibility that the well may prove productive. Bottom of the hole is at 8,887 feet and the formation is a gray sand and shale. Richfield's wildcat is No. 1 Kern County Land in Section 28-11-20, in the extreme southern end of San Joaquin Valley and high up in the Wheeler Ridge



General Petroleum Corp. No. 18 Barnard, located northwest of No. 57 Lloyd of Tide Water Associated Oil Co., the deep zone discovery well, recently extended the productive limits of the deep 57 zone out on the north flank of the Ventura Avenue structure. Bolsa Chica, holding offset acreage, has a deal with British American Oil Co. whereby the latter will drill deep wells on the Hartman lease

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

	December 3		November 26			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	71,211	10,173	.....	.....	924,037	129,788
Fuel oil	70,297	10,042	.....	.....	129,261	.....
Diesel and gas oil	.....	.....	54,916	7,845	251,560	476,041
Gasoline	173,822	24,832	.....	.....	2,905,032	4,061,379
Kerosene	.....	.....	.....	.....	349,750	401,657
Asphalt	.....	.....	.....	.....	490,039	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports—						
Crude oil	316,499	45,214	410,492	58,642	24,854,881	18,093,025
Fuel oil	444,410	63,487	150,948	21,564	10,860,451	15,125,074
Diesel and gas oil	16,640	2,377	247,412	35,345	8,413,220	10,379,147
Gasoline	98,619	14,088	405,440	57,920	12,511,318	12,943,421
Kerosene	.....	.....	.....	.....	1,646,850	2,919,066
Asphalt	.....	.....	.....	.....	63,821	.....
Lubricants	.....	.....	.....	.....	709,702	603,741
Other unfinished oil	.....	.....	.....	.....	.....	1,028,732
Coastwise-domestic—						
Crude oil	233,850	31,979	130,313	18,616	10,663,583	5,416,341
Fuel oil	426,615	60,945	660,669	94,381	17,577,143	20,592,939
Diesel and gas oil	41,571	5,939	42,455	6,065	2,886,236	3,477,168
Gasoline	269,996	38,571	441,144	63,021	20,776,438	20,500,261
Kerosene	13,512	1,930	44,194	6,313	851,815	817,563

section comprising a low range of mountains which is a part of the Tehachapi Range. The well has an elevation of 2,014 feet. The Wheeler Ridge field was discovered several years ago by Standard Oil Co. and while it has been a steady producer since discovery it has only been of secondary importance from a production standpoint. The structure is badly faulted and it remains to be seen whether Richfield No. 1 Kern County Land is on the original Wheeler Ridge structure or in a new productive area. Last week Richfield Oil Corp. opened up a new productive oil and gas field in the Tupman area east of Elk Hills and for this reason the company's wildcat in the Wheeler Ridge district is of more than passing interest.

Southeast Coalinga

One new well was completed in the Southeast Coalinga field in the past week and another is scheduled for completion within the next 10 days. The completed well was R. S. Lytle No. 88-7-F in Section 7-20-16, flowing 4,215 bbls. of very clean 29.5-gravity oil and 850,000 feet of gas per day from the Avenal zone with bottom of the hole at 8,021 feet. The hole was finished with an 8⅝-inch water string landed at 7,630 feet and 415 feet of 5¾-inch liner including 385 feet of 100-mesh landed on bottom and 7,574 feet of 3-inch tubing. Top of the pay was logged at 7,710 feet and the bit was still in oil sand when drilling operations were concluded. No. 88-7-F was brought in flowing through a 35/64-inch bean but this was reduced to 12/64-inch immediately after completion, as a curtailment measure. Current production is 460 bbls. per day with a tubing pressure of 1,475 pounds and a casing pressure 1,500 pounds. Superior Oil Co. No. 2 Coalinga fee, in Section 7-20-16, elevation 832 feet, topped the Gatchell zone at 6,743 feet and a 9⅝-inch water string has been cemented at 6,730 feet with bottom of the hole at 6,775 feet. This well should be tanking oil shortly. Superior No. 1 Cagle, most northerly drilling well in the field, has passed the 5,700-foot level and has some distance to go before reaching the depth at which the pay is expected. This outpost will prove or disprove a rather general belief that a fault separates the Southeast Coalinga field from the East Coalinga field. On the Fleishhacker property north of the Southeast Coalinga field, Tide Water Associated Oil Co. is rotating at 6,809 feet, but has not had any encouragement to date. The company is expected to drill a second test in this area in the event that No. 1 Fleishhacker is a failure.

Wilmington

Four new wells and one recompletion were put on production in the Wilmington field of Los Angeles Basin but none of them registered large production. Union Pacific Railroad Co. completed No. 2-EU flowing 240 bbls. of very clean 24.9-gravity oil daily from 3,592 feet and No. 3-EU flowing 330 bbls. of clean 21.4-gravity oil per day from 2,694 feet. Union Pacific Railroad Co. is proceeding to change its development program in this field and will probably begin exploiting the Ford zone in the Long Beach section if its No. 94 comes up to expectations. This deep zone test is going ahead at 5,650 feet.

Pacific Western Oil Co. No. 1 Wilmington Community after having been deepened to the Ford zone was good for only 102 bbls. of 28.8-gravity oil, cutting 6 per cent, on the beam with bottom of the hole at 5,690 feet. Pacific Western Oil Co. No. 1 Wilmington Community was finished with a 6⅝-inch oil string carrying perforations at 5,215-350 feet, 5,430-45 feet and at 5,455-510 feet and was cemented through perforations at 5,602 feet. General Petroleum Corp., discoverer of the Wilmington field, completed No. 4 Blinn, flowing, through one-half inch choke, 270 bbls. of 17.4-gravity oil per day from the Ranger zone with bottom of the hole at 3,197 feet. D. D. Dunlap No. 4-W was brought in flowing 145 bbls. of 17.2-gravity oil daily from the Terminal zone, with bottom of the hole at 3,580 feet. Flow was coming through a 22/64-inch bean and current production is coming from the Tar zone with a resulting change in gravity to 14.4 degrees. The Wilmington field produced approximately 97,500 bbls. per day during the past week and continues to be the largest contributor to overproduction of crude oil in the state. This area, which likewise heads the production list, holds the key to the future condition of the California oil industry at least for the next several months.

Coles Levee

Two new wells are being started in the Coles Levee field of Kern County, discovered a few weeks ago by Ohio Oil Co., but this does not indicate that the field will be aggressively developed. Standard Oil Co. has staked a location 330 feet south and 330 feet west of the northeast corner of Section 9-31-25 about 1 mile west of Ohio Oil Co. No. 1-F Kern County Land, the discovery well, which was completed flowing 732 bbls. of clean 45.1-gravity oil per day from 9,365 feet, and about 2½ miles southeast of Richfield Oil Corp.'s discovery well in the Tupman field. Ohio Oil Co. has started derrick construction for No. 2-F Kern County Land, its second well in the Coles Levee field, in section 10-31-25, approximately 1,300 feet due north of the discovery well, and the bit should begin making hole within a fortnight. In No. 2-F Kern County Land a special attempt will be made to blank off as much of the gas cap as possible in order to conserve this lifting energy and increase ultimate production of crude oil. This will have a tendency to reduce the gravity of crude oil and should bring it down to about 30 degrees.

West Montebello

Two excellent producing wells were completed in the west extension of the Montebello field of Los Angeles Basin and another which developed water trouble should be ready for a production test within another few days. The new wells were Montebello Reservoir Oil Co. No. 1 Montebello completed flowing 1,750 bbls. of 35.9-gravity oil cutting 2 per cent and V-8 Oil Co. No. 1 M. B. finished flowing 2,040 bbls. of clean 36.1-gravity oil per day. The former was brought in flowing through a 1-inch bean and showed a tubing pressure of 250 pounds and a casing pressure of 800 pounds. No. 1 M. B. finished with 360 feet of 5¾-inch liner including 55 feet of perforated and cemented through perforations at 6,638 feet was brought in flowing through two 1-inch beans and showed a tubing pressure of 200 pounds and a casing pressure of 250 pounds. Montebello Reservoir Oil Co. new well was bottomed at 6,715 feet while V-8 Oil Co.'s new producer was finished at 6,694 feet. Both wells were completed in the fourth finger of the sixth zone. Pongratz Petroleum Co. No. 1 Martin finished at 6,700 feet with 367 feet of 5½-inch liner including 64 feet of perforated and cemented through perforations at 6,636 feet came in flowing 2,400 bbls. of 36.3-gravity oil but was killed after being on production for a few hours when the cut rose to 25 per cent salt water.

Several wells are being started in the west extension

(Continued on Page 83)

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Wheeler Ridge	Kettleman Hills	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.76	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.83	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	..	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	..	..	..	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	..	..	..	..	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Southwest Texas District

By F. L. SINGLETON

Sweden Field Is Revived by Good Well in an Upper Sand

CORPUS CHRISTI, Tex., Dec. 12.—A revival of drilling in the Sweden field, Duval County, was forecast following the completion of Longhorn Drilling Co. and others No. 1 Miller, 1 mile southwest of the field proper, which flowed 203 bbls. of pipe line oil per day through a 5/32-inch choke, with tubing pressure 780 pounds and casing pressure 1,000 pounds. The well is producing from the Government Wells sand at 4,893-99 feet, total depth. This is the second well completed in this sand and a hearing will be held before the Railroad Commission to determine if the area will be classified as an extension or a new field. Previous development has been confined to the Cockfield sand at approximately 6,000 feet from which several wells have been completed as distillate producers.

On the Seadrift prospect, Calhoun County, Hiawatha Oil and Gas Co. was preparing to make a production test of No. 2 John Roemer Estate. The hole was drilled to a total depth of 10,015 feet, and after running an electrical survey, was plugged back to 8,550 feet, and a series of tests will be made above that point. This is the second test drilled by the company on this prospect.

Phillips Petroleum Co. No. 1 Rafel Flores, a quarter mile north of the Samfordyce field, Hidalgo County, flowed 50 bbls. of water-white distillate and 2,260,000 feet of gas per day through a 3/16-inch choke. The well is producing from a new sand through perforated casing at 5,840-5,900 feet.

Six miles northwest of Robstown, Nueces County, Stanolind Oil & Gas Co. No. 1 Clark is shut down awaiting orders, after the well attempted to blow out from a total depth of 7,015 feet. An electrical survey was made, but the results were not available. This well is just southeast of Seaboard Oil Co. No. 1 Wilson which blew out, caught fire and cratered in the previous week.

Two more producers were added to the La Rosa field, Refugio County. Geophysical Service Inc. No. 1 Michna, perforated casing at 6,330-35 feet, and was completed for an initial production of 155 bbls. per day through a one-eighth inch choke. This is the second producer from this sand. Southwest of production, about 4,000 feet, Hewitt & Dougherty No. 1 B. D. Rooke, perforated casing at 5,895-5,900 feet, and was completed for an initial production of 155 bbls. per day, through a 5/32-inch choke. Illinois Petroleum Co. No. 1 Sasse was cleaning out through perforated casing at 6,325-29 feet.

Humble Oil & Refining Co. has started drilling an interesting wildcat in Brooks County. The well is on the McGill Brothers lease on the Ygnacios Rivas, La Blanca grant, about 2 miles east of the Kelsey field in Jim Hogg County, This block adjoins the Kelsey field and it has been worked extensively with geophysical instruments. In the Kelsey field proper, Humble Oil & Refining Co. recompleted No. 3 Kelsey Bass through perforated casing at 4,728-35 feet, and the well is flowing 140 bbls. per day through a three-sixteenths inch choke. It continues to show a small amount of salt water. The well is apparently on the north edge of the structure.

A half mile north of the discovery well of the Sun field, Starr County, Circle Oil Co. No. 1 Olivares flowed 65 bbls. of 47.9 gravity oil per day through a one-eighth inch choke. The well is producing from a new sand through perforated casing at 5,117-19 feet.

Steinberger Petroleum Co. No. 1 Albrecht, Thomas Hancock Survey, Goliad County, has been placed on production and is flowing an estimated 4 bbls. of fluid per hour through a three-sixteenths inch choke. Seventy-five per cent of the fluid is 44-gravity oil and the balance wash water. The casing was perforated at 5,-238-44 feet. This is the first oil production in the area, as previous development resulted in high pressure gas wells.

In Webb County, Taylor Petroleum Co. No. 1 Zapata, block 15, Survey No. 334, looms as the discovery well of a new shallow field, as casing was cemented for a production test. The hole is bottomed at 2,082 feet, and 5½-inch casing was cemented at 2,065 feet. Sand and sandy shale with an oil odor were cored at 2,078-82 feet.

In Balcones Fault line district, Fred Pederson and others No. 1 Brown, an Edwards lime test in Lee County was swabbing showing salt water and some oil. The hole is bottomed at 6,404 feet with 7-inch casing cemented at 6,380 feet. Several important Edwards lime tests have been drilled during the year but no outstanding discoveries have been made.

In Guadalupe County, F. H. Glenn No. 1 Appling, H. Cottle Survey, topped the Austin chalk at 1,940 feet and cored chalk to 2,137 feet, logging an oil show at 2.130-37 feet.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

(24-hour production)

Aransas County

McCampbell field: Atlantic Refining Co. No. 1 W. W. Long, perforated casing 7,112-16 feet, 240 bbls., three-sixteenths inch choke. Frank Grote No. 1 McCampbell, perforated casing 7,116-23 feet, 115 bbls., three-sixteenths inch choke. Frank Grote No. 3 Tedford, perforated casing 7,117-23 feet, 105 bbls., 7/64-inch choke. Smith and others No. 1 Barfoot, 7,125 feet, 119 bbls., 3/16-inch choke.

Brooks County

Alta Mesa field: Lanning and Coffield No. 1 La Mestena Oil & Gas Co., 2,808 feet, abandoned.

Caldwell County

Branyon field: Coffield & Robinson No. 1-C Young, 2,220 feet, 50 bbls., 6 hours, pumping. Coffield & Robinson No. 1-E Young, 2,339 feet, 78 bbls., pumping. Dale field: Ralph Ogden No. 1 Dinges, 2,571 feet, 25 bbls., by heads. Salt Flat field: Elimag Oil Corp. No. 3 Dickerson, 2,725 feet, 38 bbls., pumping.

Calhoun-Victoria Counties

Heyser field: Gulf Oil Corp. No. 6 Schultz, 5,490 feet, 192 bbls., one-eighth inch choke.

Jim Wells County

South Alice field: Tom Graham No. 1 Bankers Mortgage Co. perforated casing 5,329-33 feet, 60 bbls., 3/32 inch choke.

Duval County

Benavides field: Humble Oil & Refining Co. No. 8-B Rossi, perforated casing 5,339-44 feet, 65 bbls., 19 hours, one-eighth inch choke. Casa Blanca field: Magnolia Petroleum Co. No. 13 Duval County Ranch Co., sand 1,179-85 feet, 50 bbls. per day pumping. Eagle Hill field: R. H. Feltner, 2,752 feet, abandoned. Collins & Porter No. 5 Fitzsimmons, perforated casing 4,365-81 feet, 245 bbls., one-fourth inch choke. H. J. Porter No. 8-A Fitzsimmons, perforated casing 4,313-22½ feet, 160 bbls., 5/32 inch choke. Hoffman field: Rowan & Hope No. 1-A Cuellar Bros., perforated casing 2,712-15 feet, 60 bbls., jetting. Rowan & Hope No. 1-B Cuellar, perforated casing 2,558-75 feet, 50 bbls., jetting. S. K. & C. and others No. 1-B Sutherland, 2,871 feet, dry gas well. Lundell field: Humble Oil & Refining Co. No. 4-B White, perforated casing 1,507-09 feet, 101 bbls., one-half inch choke. Rancho Solo field: McCollum & Forber No. 2 Gruy, 1,843½ feet, abandoned. Stewart & Nye and others No. 2-A Peters, perforated casing 1,-867-72 feet, 137 bbls., pumping.

Live Oak County

Oakville field: Simmons Oil Co. No. 4-B McGriff, 2,139 feet, 100 bbls., pumping.

McMullen County

Ezzell field: Harry Ezzell No. 25 Harry Ezzell, perforated casing 1,524-36 feet, 228 bbls., pumping. Edwin M. Jones No. 40 Ezzell, perforated casing 1,526-34 feet, 145 bbls., pumping. E. M. Jones No. 42 Ezzell, perforated casing 1,540-47 feet, 127 bbls., pumping. E. M. Jones No. 43 Ezzell, perforated casing 1,510-16 feet, 114 bbls., pumping. Stancel Oil Co. No. 2 Simmons, perforated casing 1,443-52 feet, 10 bbls., pumping.

Medina County

Chacon Lake field: A. A. Murrell, No. 5 fee, 398 feet, abandoned.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 1-C State, 6,660 feet, 152 bbls., 20 hours, one-eighth inch choke. Clara Driscoll field: Conservative Oil Co. No. 6 Flynn, perforated casing 3,896-99 feet, 114 bbls., 9/64-inch choke. O. W. Killam No. 10 Ellick, perforated casing 5,340-52 feet, 100 bbls., jetting. Phillips Petroleum Co. No. 2 McCright, perforated casing 5,321-26 feet, 70 bbls., one-fourth inch choke. South Clara Driscoll field: Reed & Cox No. 1 Houser, 5,475 feet, 102 bbls., 5/32-inch choke. Richard King field: Southern Minerals Corp. No. 13 King, perforated casing 4,015-19 feet, 130 bbls., jetting. Saxet field: C. Andrade No. 3 Morgan, 4,892 feet, abandoned. West Saxet field: C. Andrade No. 5 Dunn, 4,123 feet, 143 bbls., 1/64-inch choke.

Refugio County

Tomoconnor field: Copano Oil Co. No. 24-B O'Connor, sand 5,913-24 feet, 617 bbls., one-fourth inch choke. Copano Oil Co. No. 39-B O'Connor, 5,881 feet, 610 bbls., one-fourth inch choke.

San Patricio County

East White field: Plymouth Oil Co. No. 2-G Cole, perforated casing 5,640-48½ feet, 121 bbls., 7/64-inch choke. Plymouth Oil Co. No. 2-A Cole, perforated casing 5,641-45 feet, 49 bbls., 14 hours 3/32-inch choke.

Starr County

Ricaby field: G. E. Dodd No. 7 Wood, sand 1,730-41 feet, 125 bbls., pumping. Sacatosa field: Sinesa Oil Co. No. 2 Salinas, 1,682 feet, abandoned.

Condensate Well Rating Debated After Hearing

AUSTIN, Tex.—Whether wells which produce "condensate" are oil wells or gas wells was debated following a hearing before the Texas Railroad Commission.

Dr. F. V. L. Patton, the commission's chemical engineer, declared the condensate is practically a gas in the reservoir. This conclusion would make the condensate wells proratable as gas wells rather than oil wells, with a considerable difference in the allowable.

Patton said he had reproduced reservoir conditions in the laboratory, reducing the condensate to its constituent elements, and found little, if any, liquor in this form, and therefore concluded that the gas liquefies during production.

Discovery in Garza County Credited With Good Flows

By
D. H. STORMONT

FORT WORTH, Tex., Dec. 12.—Development in the Permian basin of West Texas during the past week was overshadowed by the discovery of a deep producing area in Garza County by Gulf Oil Corp., but considerable attention was given to several tests in the area between the Wasson pool and the Bennett pool in Yoakum County where a connection between the pools is indicated.

Definite information on Gulf Oil Corp. No. 1-B Swenson, Section 25, Block 2, H.&G.N. Survey, in the extreme eastern part of Garza County, was released late in the week. The well is credited with having made several good flows and on its last test, swabbed 150 bbls. of oil in 14 hours. The test was drilled to a total depth of 8,104 feet, then plugged back to 7,400 feet and set casing. This was perforated from 7,327-34 feet and as the well came in some water was reported showing. The casing was recemented and final testing was delayed as the week closed. Should recementing the bottom of the casing fail to shut off some of the water, believed to be coming from behind the pipe, it is expected to cement off a few of the lower shot holes in the casing. Pay is believed to be in the Bend lime of the lower Pennsylvanian. Gulf Oil Corp.'s block in the area consists of 95 quarter sections of the Swenson ranch. Gulf also holds two other blocks in that area, each of which also consists of 95 quarter sections.

Wasson-Bennett Pools

In the area between the Wasson pool and the Bennett pool of Yoakum County, where two weeks ago a producer was completed by J. E. Mabee as the largest well in either of the fields, three other tests have been staked, all offsets to the Mabee well, which was completed for a final gauge of 2,840 bbls. of oil per day. Mabee staked his No. 2 Coline-Willard as a south offset to his first well and Devonian Oil Co. staked a northeast offset as its No. 1 Hodges. Offset acreage to the east is held by Cascade Petroleum Co. and Honolulu Oil Corp., co-discoverers of the Bennett pool, and they have staked No. 1 Willard-Coline.

Seeking to extend the Bennett area in the opposite direction, or to the east, Shell Petroleum Corp. No. 1 Ryuts, Section 743, pumped 165 bbls. of oil in 20 hours on its latest test. It is bottomed at 4,266 feet where it has been treated with 500 and 1,500 gallons of acid.

In Cochran County, T. G. Shaw has made location and is moving in materials for his No. 1 C. S. Dean, wildcat test in the eastern part of the county, in the southwest corner of League 94, Mills County School lands.

South and Central Basin Area

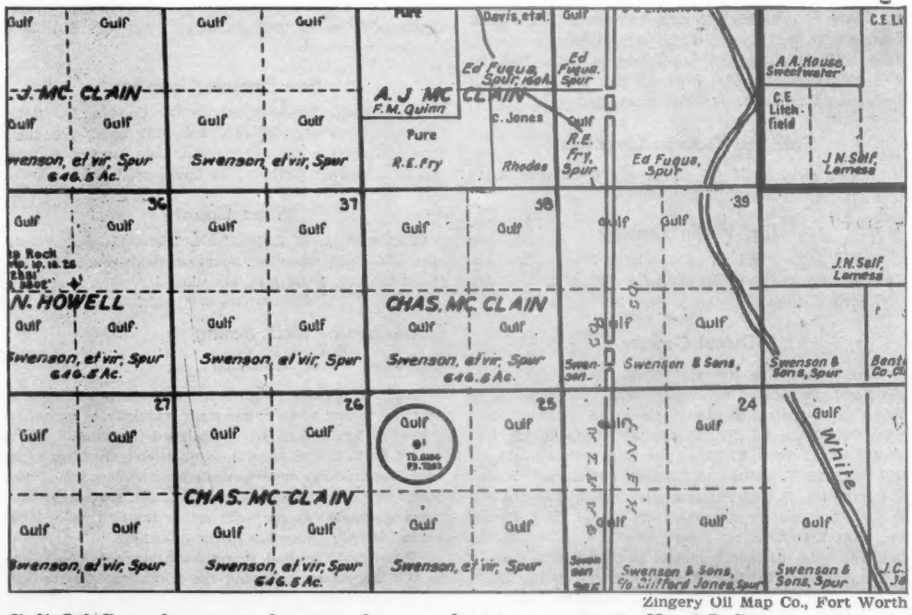
One-half mile southeast extension to the Ordovician flush production area of western Crane County was indicated by Gulf Oil Corp. No. 9 Waddell, which was showing distillate along with 13,300,000 feet of gas daily after drilling plug on 7-inch casing at 5,836 feet. The well blew for 12 hours during which time it averaged about 15,000,000 feet of gas and 46 bbls. of distillate which were tanked. Gas was reported coming from sand from 5,842-53 feet. Operator is preparing to deepen the test in search of the flush Ordovician production on the rest of the field.

In Reeves County, H. F. Anthony and others No. 1 Richards-Shaw, Section 16, Block 59, P.S.L. Survey, indicating a new pool for the western part of the county, flowed 19 bbls. of oil in eight hours through tubing. Production is from 1,612 to 1,614 feet with total depth being 1,630 feet.

Andrews County registered two failures as two outposts, one to the Emma pool and one to the Rogers & Rogers area, were dry. L. H. Wentz No. 1 Cowden, Section 3, Block 43, T.&P. Survey, 2½ miles southeast of the Emma area was plugging to abandon at a total depth of 4,436 feet. Great Western Producers abandoned No. 1 O. B. Holt, west offset to the discovery well in the one-well area in Section 1, Block 43, T.&P. Survey.

WEST CENTRAL TEXAS

The discovery of another new pool in Jones County, the third in less than a month, and the possibility of new areas in Jack County and in Coleman County, centered the activities in one of the most productive weeks in several months for the West Central Texas district.



Zingery Oil Map Co., Fort Worth

Gulf Oil Corp. has opened a new deep producing area in its No. 1-B Swenson, eastern Garza County. The well is estimated for 200 bbls. daily from 7,400 feet

L. A. Hedrick No. 1 Akard, in the Guadelupe Martinez Survey of southern Jones County, has opened a producing area from the Bluff Creek sand from a depth of 2,154 feet. The well swabbed 66 bbls. of oil in 16 hours on latest tests with no water showing. It is about 5 miles southwest of the Hawley pool on a block of 1,200 acres.

Considerable development is being given the area where last week Ungren & Frazier opened a pool just east of the town of Avoca. Second producer for the area was assured by Iron Mountain Oil Co. No. 1 J. T. Taylor, north offset to the discovery well. The test cored oil sand from 3,224-27 feet, where it is bottomed to cement casing. A new location was staked by Fred Browning as his No. 1 Independent School District, in the Avoca townsite, about half a mile southwest of the discovery.

A new area was indicated in northeastern Jack County when Crusaders Oil Co. No. 1 Pigg, in the D. A. Norton Survey, Abstract 1151, logged shale and sand showing oil and gas from 3,320 to 3,340 feet. The test is drilling deeper, with plans to complete the contract depth of 4,000 feet before testing any shows.

New Pool in Coleman

Discovery of a new pool in west central Coleman County was indicated at the wildcat being drilled for J. D. Kynaston and J. D. Bozeman when it encountered saturated lime at 2,685-90 feet. The test is in the Glen Cove area and in Section 41, B.B.B.&C. Survey. It is estimated for 25 to 30 bbls. per day from the Canyon sand. Operators plan to drill on to the contract depth of 3,500 feet before testing the zone for production.

Largest well in Stephens County since the boom days of the Breckenridge pool was seen in Horwitz & Oldham No. 1 Stribbling, J. Kohler Survey, Abstract 96, about 7 miles east of the Shackelford-Stephens county line. The producer is bottomed at 3,542 feet with saturation drilled from 3,530-42 feet in Caddo lime. When plug was drilled, the well flowed 28 to 30 bbls. oil naturally per hour with total production of 400 bbls. of oil in 14 hours. The well is approximately a quarter mile northwest of Horwitz & Oldham No. 1 Dance Heirs, the discovery well in the area, completed last spring for about 300 bbls. daily.

WEST TEXAS COMPLETIONS

(24-hour tests)

Andrews County

Humble Oil & Refining Co. No. 52 J. S. Means, 4,490-4,515 feet, 1,127 bbls. L. H. Wentz No. 1-L W. F. Cowden, dry and abandoned at 4,436 feet. Superior Oil Co. No. 1 University, 4,181-4,286 feet, 60 bbls.

Ector County

Broderick & Calvert No. 9 J. E. Witcher, 4,100-4,275 feet, 1,600 bbls.; No. 10 Witcher, 4,161-4,318 feet, 1,103 bbls. Continental Oil No. 5 Johnson, 4,162-4,280 feet, 753 bbls. Gulf Oil Corp. No. 138 Goldsmith, 4,152-4,212 feet, 824 bbls.; No. 139 Goldsmith, 4,120-4,250 feet, 2,808 bbls.; No. 141 Goldsmith, 4,148-4,203 feet, 1,032 bbls. Shell Petroleum Corp. No. 6-B T.&P. 4,224-94 feet, 194 bbls.; No. 4-D University, 3,345-3,665 feet, 2,180 bbls.

Gaines County

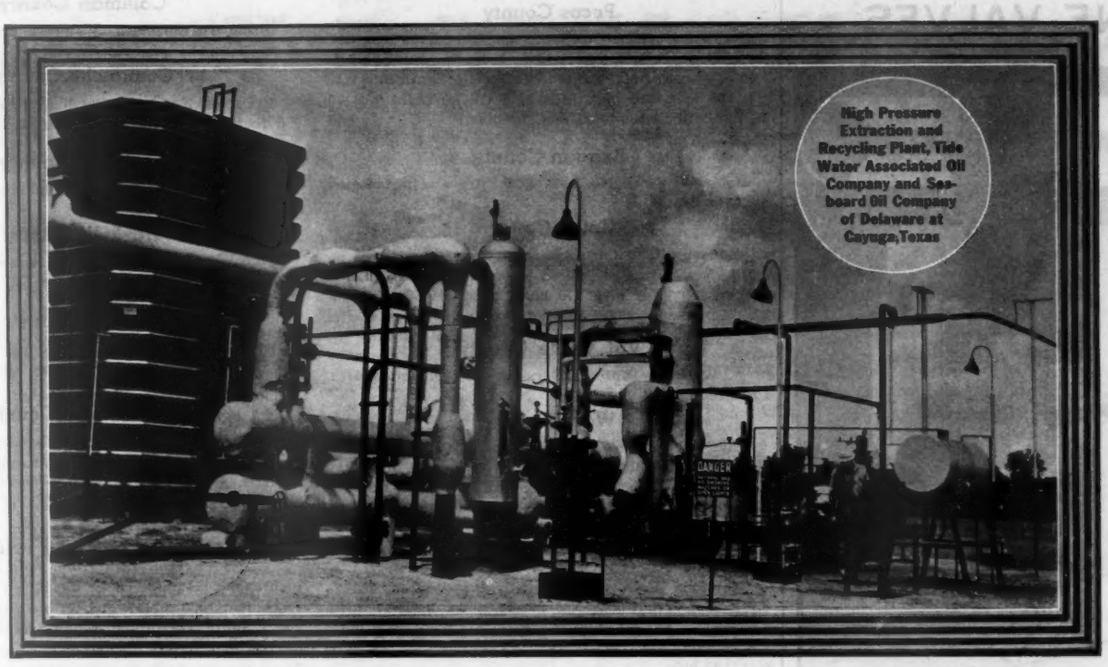
Magnolia Petroleum Co. No. 1 H. & J., 5,033-72 feet, 254 bbls.

Howard County

Magnolia Petroleum Co. No. 11-A O'Daniel, 2,625-2,795 feet, 327 bbls.

Hockley County

Murchison & Closuit No. 1 Slaughter, 4,982-5,057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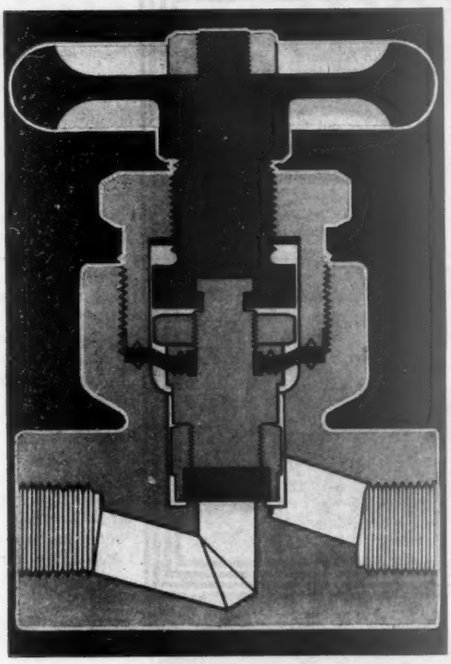

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2104	3/16"	3/8"	970 P.O.L.
2153	1/4"	3/4"	3/4"
2453	11/32"	1/4", 1/2"	1/4", 1/2"
2713	3/4"	3/4", 1"	3/4", 1"
2813	1-1/4"	2", 1-1/2", 1-1/4"	2", 1-1/2", 1-1/4"
2913	2"	2", 1-1/2", 1-1/4"	2", 1-1/2", 1-1/4"
3313	1/2"	1/2", 3/4", 1"	1/2", 3/4", 1"

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feet, 660 bbls. Texas Co. No. 3 Slaughter, 4,932-5,003 feet, 267 bbls.

Jeff Davis County

H. D. Wilcox No. 1 Jones-Coffield, dry and abandoned at 3,747 feet.

Pecos County

British American No. 7 Payton, 1,910-2,105 feet, 307 bbls. Kone Production Co. No. 7 Pecos Valley, 1,593-1,665 feet, 437 bbls. Sahara Oil No. 1 Atlantic-Shearer, 1,472-90 feet, 116 bbls. Standard Oil of Texas No. 10 M. A. Smith, 1,290-1,389 feet, 13 bbls.

Reagan County

John W. Emch No. 1 T. & P., dry and abandoned at 2,752 feet.

Upton County

Addison No. 1 Carter-State, dry and abandoned at 2,219 feet. Humble Oil & Refining Co. No. 27-B Ricker, 2,469-2,473 feet, 79 bbls. Edwards-Moore No. 2 Shell-Burleson, 2,330-2,404 feet, 4 bbls.

Val Verde County

A. W. Little No. 1 Sellers, dry and abandoned at 1,650 feet.

Ward County

Gulf Oil Corp. No. 103 O'Brien, 2,578-2,765 feet, 129 bbls. Humble Oil & Refining Co. No. 22-F University, 2,545-2,745 feet, 905 bbls. Magnolia Petroleum Co. No. 12-46 Sealy, 3,034-85 feet, 37 bbls. Sahara Oil No. 1 Dorr, 2,025-78 feet, 93 bbls.

Winkler County

Magnolia Petroleum Co. No. 198 Walton, 3,142-3,212 feet, 249 bbls.; No. 200 Walton, 2,825-77 feet, 1,533 bbls.; No. 201 Walton, 2,825-2,935 feet, 1,900 bbls. Richardson No. 7-F W. F. Scarborough, 2,798-2,871 feet, 133 bbls.

Yoakum County

Aloco Oil Co. No. 1 C. W. Cecil, 4,900-5,136 feet, 242 bbls. Humble Oil & Refining Co. No. 3 Abilene State, 4,893-5,030 feet, 572 bbls. J. E. Mabee No. 1 N. W. Willard, 4,986-5,227 feet, 2,840 bbls. Magnolia Petroleum Co. No. 5 R. Bennett, 5,195-5,254 feet, 740 bbls. J. W. Murchison No. 1-B C. A. Elliott, 4,812-5,125 feet, 783 bbls. Shell Petroleum Corp. No. 6 Lowe, 4,865-5,150 feet, 587 bbls. Texas Pacific Coal & Oil No. 14 Bennett, 5,070-5,240 feet, 2,256 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Brown County

Cox & Slusher No. 1 Guthrie, 893-910 feet, 5 bbls. Evans No. 1 Kilgore, 1,121-30 feet, 10 bbls.

Callahan County

Dunlap No. 1 Dunlap, dry and abandoned at 801 feet. Forest Development Co. No. 1 Johnson, dry and abandoned at 593 feet. R. R. Morden No. 5 Isenhower, dry and abandoned at 268 feet.

Coleman County

Anzac Oil Corp. No. 2 Morris, dry and abandoned at 3,375 feet.

Comanche County

McCarter No. 1 Landreth, dry and abandoned at 855 feet; No. 1 Smith, 630-37 feet, 4 bbls.

Eastland County

Baker No. 3 Malloy, dry and abandoned at 3,087 feet.

Haskell County

Culberson Brothers No. 1 Hughes, dry and abandoned at 3,655 feet.

Jones County

Iron Mountain Oil No. 8 Jones-Stasney, 3,202-17 feet, 864 bbls. Stiles No. 1 Cook, dry and abandoned at 4,315 feet.

Shackelford County

Beck No. 1 Green, dry and abandoned at 1,602 feet. Hart No. 1 Saunders, dry and abandoned at 606 feet. John H. Sedwick No. 1 Cloud, dry and abandoned at 1,190 feet.

Gulf Coast Fields

(Continued from Page 68)

inch choke. Humble Oil & Refining Co. No. 7 Partlow, 7,624 feet, 530 bbls., quarter-inch choke. Texas Co. No. 1 Smith, perforated casing 7,587-92 feet, 505 bbls., quarter-inch choke. Tide Water Associated Oil Co. No. 4 Cessan, 7,658 feet, 389 bbls., quarter-inch choke.

Jefferson County

Clam Lake field: Shell Petroleum Corp. No. 3 McFaddin, 5,975 feet, 401 bbls., quarter-inch choke.

Orange County

Orange field: Gulf Oil Corp. No. 3 Granger, 5,959 feet, 565 bbls., quarter-inch choke.

Polk County

Gulf Oil Corp. No. 4 Ragan, sand 8,072-80 feet, 609 bbls., quarter-inch choke.

Wharton County

Pickett Ridge field: Gilcrease Oil Co. No. 1 Kubela, 4,825 feet, abandoned.

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North and East Texas

By
D. H. STORMONT

Hull-Silk May Have 4 Mile Extension in Archer County

WICHITA FALLS, Tex., Dec. 12.—The possibility of a 4-mile extension to the 4,300-foot pay level of the Hull-Silk pool in northern Archer County centered the majority of attention in North Texas over the past week.

Approximately 4 miles northeast of the main producing area of the 4,300-foot level in the Hull-Silk pool, Louis Sikes (formerly J.K.L. Oil Co.) No. 1 Ford, in the T. Cecil Survey, Abstract 982, was deepened after abandonment by its former owners, and is indicating commercial production from several sections of saturation from 4,378 feet to 4,438 feet, total depth. The latest drill stem test on the well showed 900 feet of oil when opened for 15 minutes. An electrical survey was made and water was indicated in the last 35 feet of hole and as the week closed operators were preparing to plug back 35 feet and run 5-inch casing to top of saturation. Completion of this test will stimulate a great deal of activity for this Strawn series pool.

Arrangements for ending pipe line proration in the K.M.A. pool and Hull-Silk pool were announced by the Railroad Commission in the past week. The latest development was the Texas Co.'s promise to take 100 per cent of the allowable from its connections for the next 60 days in the hope a plan, satisfactory to all concerned, could be worked out in the meantime. The Gulf Oil Corp. and Magnolia Co. previously had agreed to buy 100 per cent of the production allowances from their connections. The Sinclair Prairie and Continental companies are still buying, respectively, only 65 and 80 per cent of the allowables of their connections.

K.M.A. East Extension

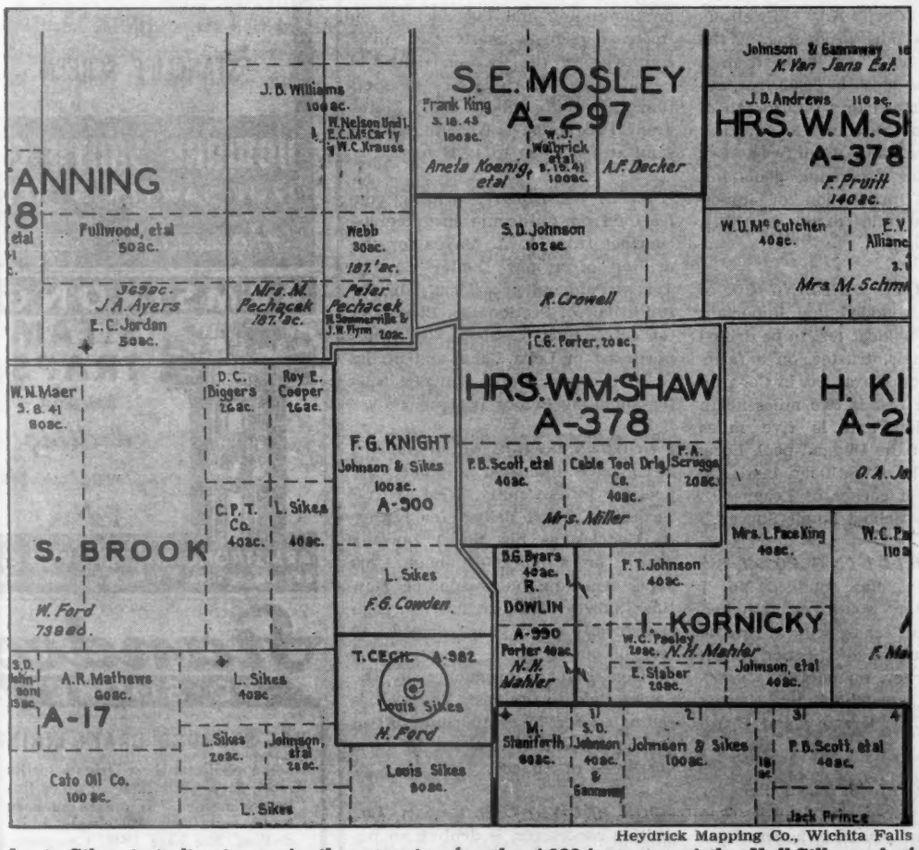
John L. Swanner No. 1 Williams and others in Block 5, J. McCool Survey, which promises a mile and a half east extension to the K.M.A. pool is believed good for from 100 to 200 bbls. per day as testing continues. The wildcat is bottomed at 4,054 feet with several sections showing saturation. Operators plan to clean out to bottom. The well is making about 40 bbls. head every hour.

In the new pool opened last summer 3 miles south of Wichita Falls, on the State Asylum lands, Petroleum Producers Co. and Continental Oil Co. are below 4,138 feet in their second test in the area. It is the No. 1 Finkler, in the Reynolds Green Survey and is a south offset to the discovery which is pumping about 60 bbls. daily from a total depth of around 5,400 feet.

A new northeast location for the Holliday Canyon sand pool of southern Wichita and northern Archer counties was staked by the King Oil Co. as its No. 2 Jackson, Section 20, Block 4, Denton County School lands.

New shallow oil pool for northern Grayson County was in prospect in the Ross & Marshall No. 1 Christman, M. L. Ahalt Survey, Abstract 1427. The wildcat is about 9 miles northwest of Denison and approximately 2½ miles north of Pottsboro. Casing was set at 832 feet on top of 3 feet of saturated sand. The well is estimated for 35 bbls. daily.

Third producing horizon for the Castlebury pool of Wilbarger County was in prospect when Phillips Petroleum Co. No. 2 Shive, Section 79, Block 14, H.&T.C. Survey, was bottomed at 3,750 feet and preparing to perforate casing around 3,432 feet in the upper part of the Canyon section where the well had a good oil showing while drilling. The test was found nonproductive in the deeper pay horizon of the pool proper.



Heydrick Mapping Co., Wichita Falls

Louis Sikes is indicating a 4-mile extension for the 4,300-foot pay of the Hull-Silk pool of northern Archer County

Houston County

Houston County has its first directionally-drilled well at the Humble Oil & Refining Co. No. 2 Dailey and Taylor, in the Jesse G. Thompson Survey, southwest of production in the Navarro Crossing pool in the northwestern part of the county. Instead of abandoning the well as previously reported, the company has plugged back to 3,500 feet where knuckles were set to drill the test 5 degrees directionally north from the 3,500 feet. Objective is the Woodbine sand producing in the Navarro Crossing pool.

Wildcat Tests

Derrick was being built and heavy rotary outfit moved in for what may be a 7,000-foot test for Upshur County. The drill site was staked in the southeast corner of the 56-acre Lizzie Parker tract, J. B. Coy Survey. It is on a block of several thousand acres assembled by R. E. L. Johnson.

Two wildcat tests were abandoned, one each in Trinity County and Falls County. Taubert & McKee Drilling Co. quit its No. 1 First National Bank of Overton at a depth of 2,000 feet. The test was located 5 miles northwest of Apple Springs and in the James Walker Survey, of Trinity County. In Falls County, the Kincaid Production Co. is reported to have plugged and abandoned its No. 1 Davis, in the Pedor Zarza Survey at a total depth of 914 feet.

EASTERN TEXAS

DALLAS, Tex., Dec. 12.—Henderson County in the East Texas area, the Flag Lake pool, was assured two more producers to bring the total to 14. Probably the best of the two indicated producers is Richards & Holloway and Chalk & Slaughter No. 1-B Tarkington, north of the partnership's producer in the Newell Survey, which was still cleaning out into pits. The other indicated producer is in the northern part of the pool and is the Texas Co. No. 3 Nolan, which is rigging up pump after failing to flow.

Also in Henderson County, a wildcat to be drilled by J. V. Scrivener and associates on the J. K. Richardson ranch, is rigging up preparatory to spudding. Test is in the V. F. Holland Survey about 6 miles north of Athens.

In the Opelika area of Henderson County, Tide Water-Seaboard-Humble are drilling below 5,746 feet in their third test for the deep structure. Test is the No. 1 McGee, in the R. Acosta Survey.

EAST TEXAS FIELD COMPLETIONS

(One-hour tests)

Gregg County—Longview Area

Atlantic Refining Co. No. 38-A E. Burnside, 3,504-3,629 feet, 108 bbls.: No. 6-A H. L. Foster, 3,556-3,731 feet, 92 bbls. Humble Oil & Refining Co. No. 10-A J. H. Sheppard, 3,665-3,681 feet, 44 bbls. Jackson-Wide & Sneeden No. 10 R. Corbin, 3,600-3,740 feet, 100 bbls. Magnolia Petroleum Co. No. 9 H. Key, 3,541-58 feet, 92 bbls. Selby-Lewis No. 42-B Snavely Heirs, 3,558-3,600 feet, 62 bbls. Shell Petroleum Corp. No. 7 W. L. Brawley, 3,710-75 feet, 60 bbls.; No. 43 J. Moore, 3,533-3,603 feet, 54 bbls.; No. 25 G. H. Slaton, 3,580-3,694 feet, 60 bbls. Sinclair Prairie No. 64 M. Moncrief, 3,542-3,635 feet, 80 bbls.

(Continued on Page 81)

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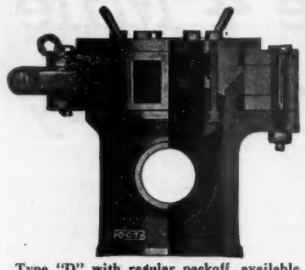

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Among the Drilling

TAUBERT & McKEE DRILLING CO. of Fort Worth, Tex., has spudded and set surface casing in a deep Throckmorton County wildcat for Red Bank Oil Corp. in the southeastern part of the county in Section 80, Block 961, T.E.&L. Survey, on the W. B. Parrott lands. It is contracted to 4,000 feet and is the first deep exploration since the closely watched wildcat by Jones and Stasney in the Brockman lands several months ago. The drilling company has also staked the first of two tests to be drilled in Trinity County, eastern Texas. The operators staked their No. 1 First National Bank of Overton, contracted to 2,000 feet. The test is five miles northwest of Apple Springs and on a block of 10,000 acres farmed out to the operators by Humble Oil & Refining Co.

WALSH DRILLING CO. of Odessa, Tex., has apparently opened a new producing area in the extreme northern part of the West Texas Permian basin. The prospective pool is in northeastern Garza County, in Section 25, Block 2, H.&G.N. Survey, and is Gulf Oil Corp. No. 1 Swenson. The well is now producing at the rate of 10 bbls. per hour from a plugged-back depth of 7,352 feet, after having drilled to a total depth of 8,104 feet in the course of the last eight months. Garza County has two small shallow producing pools but the nearest production of importance lies 80 miles to the southeast in Fisher County.

C. E. WAITE DRILLING CO. of Tulsa has spudded an important West Texas wildcat test to be drilled by T. G. Shaw, trustee, on a farmout block from Texas Co. in Cochran County. The test is two miles north of production and is five miles northwest of the Duggan pool. Location is in the C. S. Dean lands, in the southwest corner of League 94, Mills County School Lands Survey.

AJAX DRILLING CO. of Big Springs, Tex., has spudded No. 1 Otto Schuster, southwest Mitchell County, West Texas, wildcat, in the southeast corner of Section 25-17, S.P.R.R. Survey, on part of a 9,000-acre block assembled by Hervey Humlong, J. N. Gregory and Bruce McKague.

FRANK GILLESPIE, driller for John E. Farrell of Fort Worth, Tex., is completing No. 19 Waggoner for the Farrell interests in the K.M.A. pool of Wichita County. Farrell has been one of the pool's leading developers since its activity began over a year ago. No. 19 Waggoner, in Block 34, Hezekiah George Survey, north of the Wichita River, is flowing at the rate of 40 bbls. of oil per hour. In the Wichita River bed, Farrell is drilling below 1,700 feet at his No. 14 State. Location for another well in Block 12 of the George Survey was staked several days ago.

PENROD DRILLING CO., which is drilling the Hunt Oil Co. wells in Cotton Valley, North Louisiana, topped the Bodcaw sand in a northeast outpost test, about 60 feet higher than expected, showing a distinct flattening and extension of the field structure in that direction. Penrod rigs are active in six other Cotton Valley wells.

LONGHORN DRILLING CORP., organized by Henderson Coquat, established a new field in Duval County, South Texas, when No. 1 M. M. Miller flowed 203 bbls. of oil per day through 5/32-inch tubing choke with pressures of 780 pounds on the tubing and 1,000 pounds on the casing. It is nearly two miles southwest of the Sweden field and is in the NE quarter of Section 28, Ball subdivision, Flores grant. Production is from the Gravis sand at 4,893 feet to 4,899 feet.

W. D. CASEBOLT, drilling contractor from California, has received contract from A. A. Mayes for the drilling of a new Donley County, Texas Panhandle, wildcat, in the south half of Section 128, Block C-8, G.C.&S.F. Survey, about 3½ miles northeast of Lelia Lake, and in the G. F. Leathers lands. Contract calls for spudding before December 10.

UNGREN & FRAZIER, of Abilene, Tex., have indicated another new pool for Jones County, West Central Texas, by a test drilled for Luther A. Hedrick as his No. 1 Dorotha Akard, on a block of about 1,200 acres centering on Guadalupe Martinez Survey. The test has run high structurally and has drilled 13 feet of lower Bluff Creek sand—horizon that is producing in the Sayles field to the east. The well is estimated for 75 to 100 bbls. of oil per day. Location is about 10 miles northwest of Abilene.

JOE MODISETT, Shreveport, La., drilling contractor, is drilling an important wildcat in South Arkansas for Fohs Oil Co. The test, No. 1

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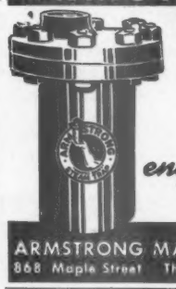

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Craig, in Union County, southeast of El Dorado, cored saturated porosity in the Smackover lime during the past week and tested oil and salt water. The well is being cored, and an electrical survey will be run shortly prior to attempts to complete it as a new field discovery.

NICKLOS DRILLING CO. opened a new sand in the Tepetate field, Acadia Parish, Louisiana, with completion of Continental Oil Co. No. 1-A Homeseekers Development Co. This well was originally completed in the discovery horizon at approximately 8,300 feet and was deepened to a total depth of 9,447 feet. Oil sand was logged at 9,165-83 feet, and it was completed in this sand for an initial production of 154 bbls. of 33-gravity oil per day through a 5/32-inch choke. Two rigs are operating at the Villa Platte field for the same company while another is running for the Texas Co. at the Fausse Point dome in Iberia Parish.

ALLEN & MORRIS are completing another producer in the La Rosa field, Refugio County, Texas, where five rigs are operating. The completion is being made for Shield Oil Co. on the Sasse lease. The well is flowing into the tanks from perforated casing at 6,325-29 feet. Three rotaries are operating in the field for Geophysical Service, Inc., and for Phillips Petroleum Co.

TRINITY DRILLERS, INC., completed two producers for Lewis Production Co. the past week, while drilling continues on five other operations for Chapman Minerals, O. W. Killam, L. A. Douglas, Transwestern Oil Co. and Continental Oil Co.

CRON & GRACEY received contract from Moore & Ahern for an interesting wildcat to be drilled northeast of the South Cotton Lake field in Chambers County, Texas. The well is on the E. Maley lease in the B. Winfree Survey and will be drilled to the Frio sand.

LOFFLAND BROTHERS moved two large rotaries to the Valentine field in La Fourche Parish, Louisiana. One rig will be operated for Pan American Production Co., while the other will be used in drilling five wells for an independent company.

HOUSH & THOMPSON will move a rig to the Rosslyn area, flanking the east side of the Fairbanks field, Harris County, Texas, where location has been made for their No. 1 Yerkes.

GEORGE ECHOLS has completed his No. 1 Security Investment Co. at the League City field, Galveston County, Texas, as an oil well. Casing was perforated at 9,062-94 feet and the well is flowing an estimated 10 bbls. per hour through a one-quarter inch choke. The completion extends the field about a half mile west.

O. P. JACOBSON, Tulsa, drilled an extension of the Grayson pool for the Superior Oil Co. which is a half mile ahead of production. The well is No. 1 Tiger, NW SE SE Section 12-6-5e, Seminole County, Oklahoma. It is reported to have pumped 210 bbls. in 24 hours.

L. A. FARRIS and JOHN F. DUWE, drilling contractors and producers of Wichita, Kans., together with Bunte Brothers are drilling a wildcat test east of Zenda, in an area southeast of the Cunningham pool in Kingman County, Kansas. The well is No. 1 Kimminau, NE NW SE Section 12-30-9w. The Mississippi lime was topped at 4,270 feet. Drilling is now proceeding below 4,300 feet.

VIRGINIA DRILLING CO., in a partnership deal with S. A. Murphy, has started drilling No. 1 Schlochtermeyer, a wildcat test in the SE NW Section 7-21-11e, southwest of production in the Snider pool in Stafford County, Kansas, in the area south of Ellinwood. In Barton County, the Virginia Drilling Co. No. 1 Clawson, SW SW NW Section 17-20s-11w, has set 7-inch at 3,285 feet in the Arbuckle and is now waiting on cement to set. A small show of oil was reported in 5 feet of lime recovered on a core from 3,283 feet to 3,295 feet. Reworked Arbuckle was topped at 3,280 feet, with the true Arbuckle top coming at 3,285 feet.

MABEE CONSOLIDATED CORP., Tulsa, has set surface pipe at No. 2 Willard-Coline, 880 feet south of No. 1 Willard-Coline, which was recently completed for 2,840 bbls. daily, representing the largest initial production of any well in Yoakum County, Texas. This development extends the Bennett pool 1¼ miles to the southwest. With Mabee Consolidated Corp., two other companies are co-discoverers in this play; these are Cascade Petroleum Co. and Honolulu Oil Corp.

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Eastern Field Report

By STAFF CORRESPONDENT

Test in Fayette County Tops the Oriskany at 6,709 Feet

PITTSBURGH, Pa., Dec. 12.—The rotary test of the Peoples Natural Gas Co. on the Piedmont Coal Co. lease on Chestnut Ridge in South Union Township, Fayette County, Pa., topped the Oriskany sand at a depth tentatively set at 6,709 feet and the crew drilled deeper and took a core from that formation.

Testing the gas from various pays in the Onondaga limestone last week with a total gauge of 5,000,000 feet, some difficulty was encountered in resuming drilling due to the gas pressure. A start was made using a slightly heavier mud with the gas still surging in the circulation. No test has been made to determine whether additional gas is present. Using the above figure for the top of the Oriskany, the Onondaga here is 189 feet thick.

South of this test along Chestnut Ridge, New Penn Development Co., William E. Snee and others topped the Tully lime at 6,238 feet in the test on the Indian Creek Coal & Coke Co. William Johnson warrant in the same township. With an elevation of 2,630 feet, this places that formation at sub-sea minus 3,608 feet or about 83 feet higher on structure than the discovery well No. 1 Summit Hotel (Heyn). This test is 17 feet lower on this horizon than the Peoples Natural Gas test on the Piedmont Coal Co. land. The present depth is 6,258 feet.

SOUTHEAST OHIO

The Columbian Carbon Co. is drilling an interesting Oriskany test in Harrison County, Southeast Ohio, on the George D. Miller farm about one-fourth mile northwest of Cadiz Junction, Section 23, German Township. The Berea sand was at 1,384 feet and casing is being run to 1,475 feet.

In Coshocton County, Kundtz Hulse, Inc., and others completed a small oil producer on the Ray Wilt farm in Perry Township in Clinton sand, total depth 3,121 feet. It had been shot. Sand was topped at 3,085 feet.

In Knox County, Pure Oil Co., a test on the Emma McCamment farm in Section 11, Jackson Township, got the Clinton sand at 3,136-97 feet. It produced 10 bbls. the first day and has a volume of 325,000 feet of gas. It has not been shot. In Section 14, Clay Township, Sterl Brown completed a test on the E. H. Lescalleet farm in the Berea sand and it produced only 15 gallons of oil the first 24 hours. The sand was at 755-764 feet and the owner will try to make a commercial well of it.

In Licking County, J. T. Bebout test on the Otto Steinmier farm one mile north of Newark City in Newark Township was completed in Clinton sand at 2,509 feet. It is a gas well gauging 500,000 feet a day. In Eden Township, C. A. Davis completed a test on the Russell Woodruff farm in the lime, total depth 2,148 feet, and it is a gas well gauging 400,000 feet a day.

In Muskingum County, the Gas Producing Co. of Ohio second well on the Clarence Wentz farm in Section 17, Brush Creek Township, was finished in Clinton sand at 4,210 feet. It is a gas well gauging 850,000 feet a day.

SOUTHWEST PENNSYLVANIA

Three gas wells were completed in Southwest Pennsylvania. In Monongahela Township, Greene County, O. I. Dille and others well on the Elmer D. Beckham farm was bottomed at 1,894 feet with the Big Injun sand at 1,743 feet and 450,000 feet of gas at 1,886 feet.

In Greene Township, Greene County, Equitable Gas Co. deepened No. 1 Durr to 2,792 feet with Bayard sand at 2,789-2,803 feet and 33,624 feet of gas at 2,792 feet. In Morris Township, Furman Nuss and others completed a gas well on the C. W. Ewings farm in the Injun sand at 1,712 feet.

In Allegheny County, J. S. Wally drilled on the Charles Spencer farm in Shaler Township through the Thirty Foot sand to 2,120 feet and it was a dry hole. In this township, Price Brothers are drilling on the William Campbell Estate at 1,650 feet. In Ross Township, Koenig and others are deepening on the M. Koenig farm. In North Fayette Township, Young & Young are rigging up on the James Sturgeon farm.

In Beaver County, Dodds & Hobbs have reached 800 feet on the James P. McCoy farm in Kennedy Township. In Green Township, B. C. Laughlin is drilling at 300 feet on the A. M. Covert farm.

In Washington County, Keystone Drilling Co. had reached 1,500 feet on the Frank Grego farm in North Strabane Township. In Chartiers Township, the Cannonsburg Iron & Steel Co. is shut down at 1,435 feet in its No. 2 fee.

In Amwell Township, Washington County, Equitable Gas Co. was drilling at 380 feet on the Porter E. Herrod farm.

Greene County

In Washington Township, Greene County, Equitable Gas Co. ran 6⅝-inch casing to 1,930 feet in No. 3 T. J. Huffman and was testing.

In Center Township, Carnegie Natural Gas Co. is held up with a fishing job at 1,702 feet in No. 4 J. H. Orndoff.

In Aleppo Township, Manufacturers Light & Heat Co. reached 3,230 feet, deepening No. 1 C. J. Behm, with the Gordon sand at 3,205 feet and a gas showing at 3,225 feet.

Deep Tests

In Mercer County, Carnegie Natural Gas Co. was drilling at 3,982 feet on the A. S. McCullough farm in Jefferson Township. At 3,925 feet the black water appeared; white lime at 3,947 feet, and dark coarse lime at 3,982 feet.

In Beaver County, Hanley & Bird were drilling at 1,460 feet on the S. Calvin farm in South Beaver Township. Surface casing has been set.

On Chestnut Ridge, Wasson & Co. are waiting for a new line in the test on the J. H. Sorg farm in North Union Township, Fayette County. The depth is 6,700 feet. In Springhill Township, same county, L. J. Houze Convex Glass Co. has a fishing job at 7,610 feet in the Paul Dunham test. The tools were trapped with a cave of about 200 feet and the line was whipped off close to the tools. The hole is now being cleaned of caving and wire. A new line has also been ordered.

WEST VIRGINIA

One small oil well was completed in West Virginia. In Wirt County, Grover Whitecotton completed a test on the Edgar Ash farm in Clay district in the shale at 153 feet and it is good for 5 bbls. a day.

In Boone County, Hope Natural Gas Co. completed No. 7839 on the H. Nunnencamp farm in Washington district at 3,004 feet. Big Injun was at 2,428-2,485 feet; Berea 2,924-2,954 feet; gas at 2,454-2,456 feet and 2,-929-2,933 feet, with a gauge of 134,000 feet a day, four days after shot.

In Cabell County, McComas & Adkins deepened No. 2 J. L. Caldwell Heirs in McComas district starting at 1,600 feet and drilling to Corniferous lime at 3,646 feet. It gauges 106,000 feet a day 48 hours after shot.

In Calhoun County, McIntosh & Grimm completed a test on the Ida Rose Wilt farm in Sherman district as a gas well at 1,992 feet. Big Injun was at 1,945-1,-992 feet; gas gauging 300,000 feet a day before shot at 1,962-1,992 feet. In this district, Garrett & Garrett completed No. 3 Fogel & Wilson at 1,903 feet. It gauged 560,000 feet a day after a 90-quart shot at 1,-881-1,903 feet. In the same district; the McCall Drilling Co. completed No. 2 R. W. Bennett at 1,917 feet; Big Injun at 1,815-1,916 feet; gas at 1,895-1,916 feet gauging 220,000 feet a day after shot.

In Sheridan district, Calhoun County, L. B. Carroll on the Mollie Cain farm had drilled to 2,273 feet with the Big lime at 1,758-1,843 feet; Kenner 1,843-1,861 feet; Big Injun 1,861-1,898 feet; gas 1,872-1,882 feet; Berea 2,242-2,272 feet; gas 2,261-2,271 feet which gauged 200,000 feet a day after a 25-quart shot in the Big Injun and 50 quarts in the Berea.

In Gilmer County, the Moran Brothers completed a test on the Jacob Taylor farm in Glenville district at 1,688 feet with the Big Injun sand at 1,568-1,685 feet and a small gauge of gas at 1,654 feet.

In Ritchie County, the Mud Lick Oil & Gas Co. completed a second well on the H. S. Phillips farm in Murphy district in Injun sand at 2,012 feet and it is a gas well gauging 166,800 feet a day. In this district, the Borders Oil & Gas Co. drilled a No. 2 on the Mary and John Border farm through the Injun sand to 2,285 feet and it was dry and abandoned.

In Tyler County, L. G. Pigott completed a test on the John Ash farm in Centerville district in the Big Injun sand at a depth of 1,955 feet and it is a gas well gauging 75,000 feet a day.

Oriskany Gas Field

Two wells were completed in the Oriskany gas field in Kanawha County, West Virginia. In Poca district, the Hays Oil & Gas Co. well on the F. M. Ray farm was completed at 5,044 feet with the Oriskany topped at 5,027 feet. It gauged 11,888,000 feet a day. In this district, United Fuel Gas Co. completed No. 4808 J. H. Bumgardner and others, at 5,086 feet with the Oriskany topped at 4,960 feet and a gauge of 1,270,000 feet a day. Drilling at 4,964 feet in No. 4811 S. E. Gibson; at 3,008 feet in No. 4794 B. B. Milam; at 2,055 feet in No. 4795 Nancy Carney and others; at 4,217 feet in No. 4796 W. J. Glass; at 1,992 feet in No. 4807 C. O. Slater and others; at 420 feet in No. 4812 J. A. Wines and others and 778 feet in No. 4768 John Wines; at 1,189 feet in No. 4815 Mamie A. Ray; at 3,312 feet in No. 4816 M. L. Miller and others; and at 1,315 feet in No. 4818 W. H. Fisher.

In this district, the Glenn Oil & Gas Co. topped the Corniferous lime at 4,988 on the Mary Beaver farm. Meigs Development Co. reached that formation at 4,852 feet on the Lola and Homer Fields farm. Mullins Gas Co. is down 4,381 feet on the Mullins & Odell lease; and 1,525 feet in the William E. Fisher test. Godfrey L. Cabot, Inc., is drilling at 1,092 feet on Putnam Co. land, and building rig for the Helen M. Hoge test. The Spartan Gas Co. is down 1,660 feet with Ernest Fisher and others test; West Virginia Gas Corp. at 1,-628 feet on the J. H. Burdette and others land; United Carbon Co. at 4,510 feet in the William Moss and others test and at 2,450 feet on the J. H. Burdette land. In Elk district, same company is drilling at 5,082 feet with the Corniferous topped at 4,965 feet in the VanCanterbury test. Columbian Carbon Co. is down 5,152 feet with the Corniferous at 4,954 feet in No. 2 Ida Hughart and building the rig for No. 1 M. N. Landers.

Outside Deep Tests

In Wood County, New Penn Development Co. (Potter) had reached 5,440 feet in deepening the test on the W. H. Orem farm in Harris district. It has passed through Clinton sand and is now in the red Medina without any showing of oil or gas. The Oriskany was at 4,326 feet; Clinton 5,155-5,385 feet; Red

(Continued on Page 91)

Oklahoma Operations

By
DAL DALRYMPLE

Discoveries in Pottawatomie, Okfuskee Counties Producing

Completion of a Wilcox sand pool opener in Okfuskee County and a Hunton lime discovery well in the Maud area of Pottawatomie County were features of an otherwise drab week in Oklahoma oil field reports. The St. Louis district in Pottawatomie County and the Cement field in Caddo County continue to be among the busier areas in the state. A 1,409-bbl. oil well and a large gasser were completed at Cement, with four producers being finaled at St. Louis.

One of the larger wells of the week was a near-completion in the St. Louis field at J. F. Smith No. 2 Hines, NE SE NE Section 21-7-4. It found Simpson dense at 4,018 feet, dolomite at 4,052-89 feet, was acidized and made potential of 1,472 bbls. of oil. Several new wells were started in the field.

Arch Oil Co. No. 1 Collins, NE SE NW Section 4-5-6, which revived the old Tyrola area of southern Seminole County when it found production in Viola lime, was reported to have flowed 480 bbls. of oil in four hours, cutting 4 per cent water. It was bottomed at 3,270 feet.

Newest producer in the Fox field, Carter County, the Gulf Oil Corp. and others No. 1 Franklin, C NW SE Section 27-2s-3w, was acidized and flowed 582 bbls. of oil net through tubing in 18 hours, with an estimated 15,000,000 feet of gas. It was bottomed at 7,652 feet in oolitic lime and may be completed at that depth.

The Grayson pool in Seminole County was extended one-half mile northeast at Superior Oil Co. No. 1 Tiger, NW SE SE Section 12-6-5. It pumped 210 bbls. of oil in 22 hours from Simpson dolomite at 3,720-89 feet.

Olson Oil Co. No. 1 Sodani-Osage, C N half NW NW Section 24-26-4e, west of Burbank in Osage County, was drilling ahead below 3,142 feet. It found considerable gas and a spray of oil in Burbank sand, topped at 3,097 feet.

Wildcat Operations

Lease Investment Co. No. 1 fee, SE SW SE Section 21-13-10, Wilcox sand pool opener in northern Okfuskee County, was completed at 3,615 feet, total depth. It topped Wilcox sand at 3,590 feet and pumped 70 bbls. of oil and 60 bbls. of water in 24 hours. It is in the northern part of the county but south of the new Okfuskee pool.

Morgan, Flynn & Cobb and Summit Drilling Co. No. 1 School Land, NE NE SW Section 16-8-5, about 3 miles north of the town of Maud in the Maud-Carr City district, opened a Hunton lime producing area and was completed after flowing 581 bbls. of oil in 24 hours on completion test, pinched in. Originally bottomed in Wilcox sand at 4,265-70 feet, where a small amount of oil was found but water predominated, it was plugged back to Hunton lime at 4,030-37 feet and casing perforated. It flowed 830 bbls. of oil in the first nine hours after perforating, with gas estimated at 7,000,000 feet.

Jack Lynch No. 1 Parker, SW SW SE Section 17-4-8, wildcat in Pontotoc County, was dry at 4,572 feet, total depth, and temporarily abandoned with pipe in the hole.

H. R. Hollenbach and others No. 1 Mathews, C SW NW Section 9-20-1e, Noble County wildcat, was dry and abandoned at 5,238 feet, total depth.

E. W. Hamilton No. 1 Riddle, NW cor. Section 3-26-4, wildcat in Kay County, was abandoned at 3,356 feet, total depth.

Portable Drilling Co. No. 1 Green, NW NW NE Section 21-8-5, outpost in the Maud-Carr City district, was reported moving in equipment. It is about one-half mile south and slightly east of the No. 1 School Land strike. The deal and acreage was worked up by R. C. Quiett, Shawnee geologist who passed up the lure of greener fields in Illinois in the belief that the Seminole district still offers much for the prospector, and Earl Sadler and Homer Hurley.

Pottawatomie County

Pioneer Drilling Co. No. 2 Polk, SE NW NE Section 35-7-4, St. Louis field, Pottawatomie County, topped Earlsboro sand at 3,394 feet, total depth 3,412 feet, and flowed 370 bbls. of oil in 24 hours.

Harry Schafer No. 1 Zoeller, SE NE NE Section 6-6-5, pumped 120 bbls. of oil and 14 bbls. of water in 24 hours from dolomite found at 4,090 feet, total depth 4,159 feet.

Taber & Coleman No. 1 Canfield, NW cor. Section 4-6-5, found dolomite at 4,232-83 feet, total depth, pumped 360 bbls. of oil and 168 bbls. of water in 24 hours and was completed. It is on the southeast edge of the field.

Hall & Briscoe No. 2 Smith, SW NE NE Section 32-7-5, found dolomite at 4,085 feet and was bottomed at 4,097 feet. It pumped 224 bbls. of oil and 300 bbls. of water in the first 24 hours.

New work in Pottawatomie County: Howard L. Berkey No. 2-A Richards, C S half SE SE Section 35-7-4, St. Louis area, had spudded; Hall & Briscoe No. 4 Coleman, NW cor. Section 33-7-5, waiting on cement at 95 feet; Big Chief Drilling Co. No. 2 Canfield, SW cor. Section 33-7-5, cellar; Westheimer & Neustadt No. 1-A Everett, SE SW NW Section 32-7-5, rigging up rotary; Alma Oil Co. No. 1-A Rhodd, NW NW SE Section 32-7-5, rigging up rotary; Magnolia Petroleum Co. No. 1-A Tull-Fyke G, NW NE NE Section 29-7-5, rigging up rotary; Mid-Continent Petroleum Corp. No. 3 Kahdat, NW SE SE Section 36-7-4, rig; Pioneer Drilling Co. No. 2 McWaters, SW NE NE Section 35-7-4, rig; Tillico Oil Co. No. 2-A Smith, NE SW SE Section 26-7-4, drilling below 187 feet; Associated Drilling Co. No. 1 Riddle, SW SE NW Section 14-7-4, cellar; Minnehoma Oil & Gas Co. No. 3 Simms, SE NE SE Secton 16-7-4, an old well, plugged back to 3,200 feet and drilled to 3,241 feet, shot and produced 3,000,000 feet of gas; Helmerich & Payne No. 2 Roberts, C N half SE SE Section 3-8-4, Grisso pool, location.

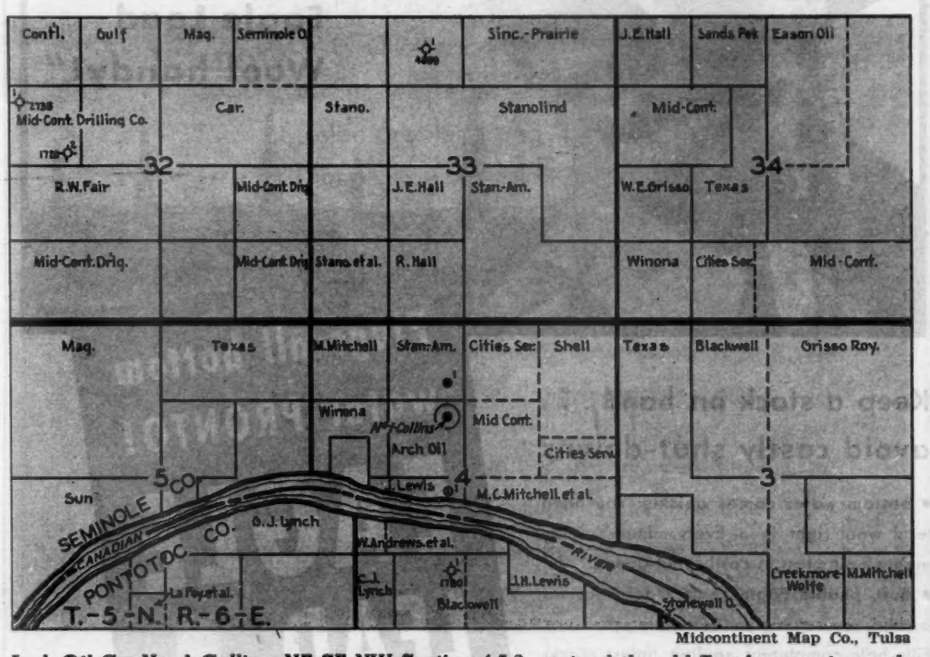
J. F. Smith No. 2 Hines, NE SE NE Section 21-7-4, was reported to have made potential of 1,472 bbls. of oil in 24 hours to rate as one of the largest producers brought in since the new drilling program started in the St. Louis field. It had dolomite at 4,052-89 feet and was acidized, but had not been listed as a completion.

Seminole County

J. F. Smith No. 2 Huddleston, SE SE NW Section 32-7-6, Dora pool, Seminole County, topped Boggy sand at 2,935 feet and was bottomed at 2,959 feet. Initially, it pumped 120 bbls. of oil in 24 hours.

Wood Oil Co. No. 2 Maxey, SW SW NW Section 1-8-6, Seminole field, had a hole full of water and was abandoned at 4,163 feet, total depth.

Several wells were due for early completion in the West Little River (Newsom) area, one of the more active districts in Seminole County. Halko & Myers No. 1



Midcontinent Map Co., Tulsa

Arch Oil Co. No. 1 Collins, NE SE NW Section 4-5-6, revived the old Tyrola area in southern Seminole County, pumping 480 bbls. of oil and 4 per cent water in four hours from Viola lime

Coker, SE SW SE Section 17-7-6, set pipe on top of Wilcox sand at 4,345 feet. J. F. Smith No. 2 Edgeman, SW SE SE Section 17-7-6, was preparing to pump after swabbing 250 bbls. of oil in four hours from Wilcox sand at 4,342 feet, total depth. Same operator's No. 1 Smith-B, NE NW NE Section 20-7-6, had Wilcox sand at 4,347-48 feet, set pipe and was waiting; Charles Newsom No. 2 Smith, SE NE NE Section 20-7-6, was waiting after setting pipe on bottom in sand at 4,342-43 feet.

Payne County

Mid-Continent Petroleum Corp. No. 2 Gray, NW SE SW Section 18-18-2e, the seventeenth producer in the Ramsey pool, Payne County, was completed in Wilcox

sand at 4,768 4,793½ feet, total depth. It flowed 1,457 bbls. of oil in five hours, and had potential of 7,032 bbls. of oil daily.

Pontotoc County

Magnolia Petroleum Co. No. 1 Chandler Estate, SE NE NE Section 35-5-7, Allen district, Pontotoc County, was dry and abandoned at 3,095 feet, total depth.

Moday Drilling Co. No. 1 Killcrease, NW SE NW Section 7-4-8, North Steedman area, was a location.

Michaelson and Skelly Oil Co. No. 1 Lord, NW cor. Section 3-1n-7, south of the Fitts area, had gas estimated at around 10,000,000 feet at 1,760-62 feet, and set pipe on bottom. It was not a completion. J. Paul Getty No. 9 Masters, NW cor. Section 23-2n-7, Fitts area, gave promise of being one of the best shallow producers in the field. It swabbed 101 bbls. of oil in 10 hours at 1,364 feet, total depth, after a shot. The crew was bailing.

Oklahoma County

Clark & Co. No. 1 Denwoodie, NW SE NW SE Section 23-12-3w, Oklahoma City field, Oklahoma County, topped Hunton lime at 6,629 feet, was bottomed at 6,649 feet, and produced 409 bbls. of oil daily, completed.

Eastern Oklahoma

R. B. Pugh No. 15 Mulling, C S half NW SE Section 35-14-14, Okmulgee County, found top of Booch sand at 1,154 feet, was bottomed at 1,180 feet, and pumped 2 bbls. of oil in 24 hours.

E. H. Young No. 3 Hart, NE SE SW Section 5-15-14, Okmulgee County, topped pay at 1,595 feet, total depth 1,610 feet in sand, and produced 750,000 feet of gas.

H. C. Detrick No. 5 Townsend, SW NW SW Section 22-12-11, Okfuskee County, had 1,900 feet of water in the hole and was abandoned at 2,231 feet, total depth.

Adams & Midco Oil Co. No. 1 Leverett, NE NE NW Section 7-16-10, Creek County, had Bartlesville sand at 2,345 feet, total depth 2,385 feet, plugged back to 2,380 feet and pumped 35 bbls. of oil.

L. B. Jackson No. 8 Wood, SE NW SE Section 27-18-8, Creek County, pumped 15 bbls. of oil after a shot from Red Fork sand topped at 2,614 feet, total depth 2,639 feet.

Sand Springs Home No. 1 Clemmons, NW SW NW Section 19-19-8, Creek County, produced 4,000,000 feet of gas in Skinner sand at 2,525 feet, total depth.

Cook No. 1 McIntosh, SW SE SE Section 4-12-17, McIntosh County, was abandoned at 2,142 feet, total depth.

Kewanee Oil & Gas Co. No. 12 Stewart, C SE NW Section 4-16-13, Tulsa County, was completed for 18 bbls. of oil daily from Turkey Mountain sand at 2,067 feet, total depth 2,078 feet.

First reports: Jess Rebold No. 1-A Neff, NE SE NW Section 31-12-14, Okmulgee County, drilling below 1,000 feet; C. H. Deaner No. 1 Warner, CNL SE SE Section 3-14-12, Okmulgee County, location; James Joseph No. 2 McKinley Porter, NE SW SW Section 23-17-15, Wagoner County, location; Richardson & Davis No. 1 Collins, SE NE NE Section 10-19-16, Rogers County, spudded; Harry Stekol No. 5-A Hildebrandt, NE SE Section 16-11-11, Okfuskee County, rigging up machine.

Central Commercial Oil Co. No. 1 Twin Rocks, SE cor. Section 16-17-9, North Bristow district, Creek County, was reported producing at the rate of 125 bbls. of oil daily, with 7,000,000 feet of gas, in Bartlesville sand. This company opened the Heyburn area, north of Bristow, where some good Bartlesville producers have been completed. Activity in Creek County has experienced a revival in recent months, with numerous old wells being reconditioned, deepened or plugged back and recompleted and with new ones being drilled in several sectors.

Lease Investment Co. No. 1-A Miley, NW SE NW Section 28-14-10, flowed 90 bbls. of oil in 24 hours at total depth of 3,244 feet in Misener sand and was preparing to deepen.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending December 10, and for the preceding week was as follows:

	Barrels	
	Dec. 10	Dec. 3
Allen	6,550	6,625
Billings	5,350	4,450
Burbank	7,425	7,750
South Burbank	9,150	8,875
Balance Osage	16,000	16,500
Blackwell district	4,025	4,125
Bristow-Slick	6,500	6,475
Chandler	1,950	1,900
Crescent	3,675	4,150
Cromwell	3,025	2,950
Cushing-Shamrock	10,325	10,200
Duncan district	4,350	4,500
Edmond	5,075	4,675
Fish	3,175	3,150
Fitts	32,450	35,800
Jesse	2,350	2,100
Graham-Fox	4,275	4,300
Gray	875	900
Healdton	9,325	9,725
Hewitt	3,600	3,625
Keokuk	3,950	3,900
Konawa	1,200	1,175
Lucien	8,025	8,275
Moore	4,525	4,275
Oklahoma City	91,800	77,550
Olympic	3,975	3,850
Ramsey	2,500	2,550
Sasakwa	1,300	1,250
Sholem-Alechem	2,325	2,275
Seminole district:		
Bowlegs	8,200	8,025
Carr City	3,175	3,050
Dora	4,625	4,525
Earlsboro	4,525	4,250
South Earlsboro	525	525
East Earlsboro	4,250	4,025
Little River	6,475	6,175
East Little River	825	825
Maud	575	550
Mission	1,350	1,225
Seminole	7,850	7,725
East Seminole	1,625	1,600
Searight	2,475	2,500
Total Seminole	46,475	45,000
St. Louis-Pearson	26,250	27,000
Tatums	1,925	1,950
Tonkawa-Garber-Thomas	4,125	4,000
Wewoka	2,250	2,200
Yale-Jennings	3,800	3,775
Other pools	82,000	85,750
Total Oklahoma	425,875	417,550

Stephens County

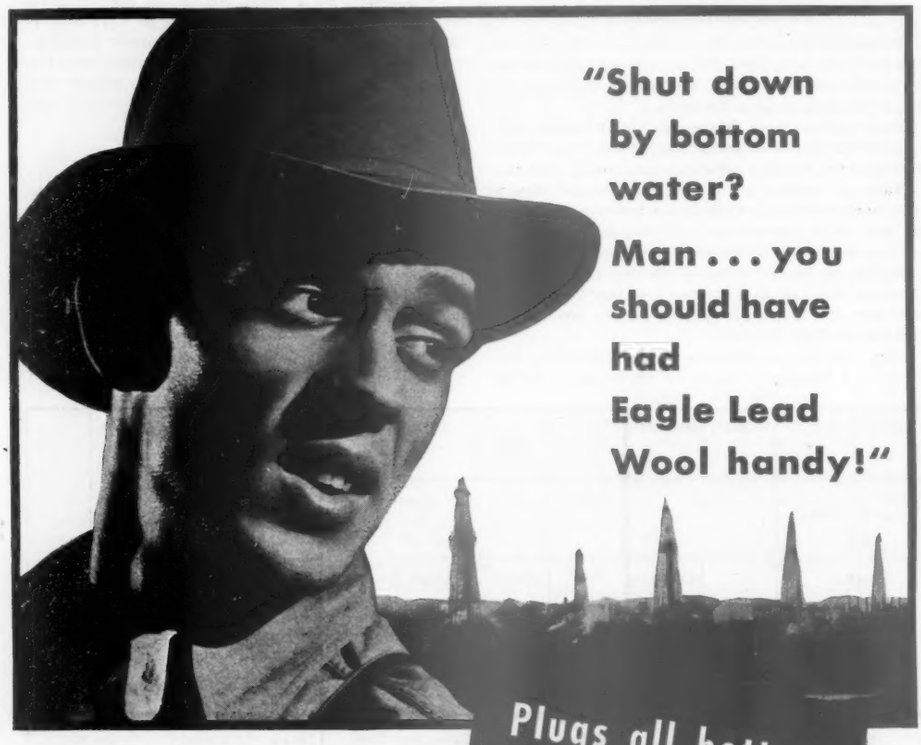
J. G. Beard No. 7 Willis, SW SE SW Section 23-2s-6w, Woolsey pool, Stephens County, topped pay sand at 1,713 feet, total depth 1,780 feet, and pumped 12 bbls. of oil in 24 hours.

Same operator's No. 1 Ferris, SW SE NW Section 26-2s-6w, had a hole full of water and was abandoned at 2,210 feet, total depth.

Louis Sikes No. 2 Kirk, C N half N half SE Section 16-1s-8w, Rainola area, was dry and abandoned at 2,900 feet, total depth, in lime.

Caddo County

Magnolia Petroleum Co. No. 10 McKenna, NE NW



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SE Section 11-5-9w, Cement field, Caddo County, flowed 1,409 bbls. of oil in 24 hours and was completed. It topped sand at 3,288 feet and was bottomed at 3,335 feet.

Olson Drilling Co. No. 1 Rigney, NE NE NW Section 12-5-9w, topped sand at 3,230 feet, total depth 3,256 feet, and produced 12,000,000 feet of gas, completed.

Ohio Oil Co. and others No. 5 Bruce, SW SW NE Section 11-5-9w, was swabbing and testing at 4,065 feet, total depth. Olson Drilling Co. No. 2-A Royce, SW NW NE Section 12-5-9w, was reaming hole at 3,140 feet.

Carter County

Shell Petroleum Corp. No. 54 McClure, NE NE SW Section 5-4s-3w, Healdton field, Carter County, pumped 23 bbls. of oil daily from sand topped at 1,046 feet, total depth 1,150 feet, in sandy lime.

Roy M. Johnson No. 21 Davis, SE SE NW Section 6-4s-3w, was completed as a 10-bbl. pumper from sand topped at 1,020 feet, total depth 1,227 feet.

New activity in Carter County: Sam Ripps No. 1-A Wolfe, SW SE SE Section 22-2s-2w, Ed Cox pool, was drilling around 100 feet; Shell Petroleum Corp. No. 56 McClure, SE NE SW Section 5-4s-3w, Healdton field, was drilling below 350 feet; same company's No. 57 McClure, NE SE SW Section 5-4s-3w, was rigging up machine.

Pure Oil Co. No. 1 Noble, C NE SE Section 33-3s-1e, wildcat northwest of Ardmore, was drilling sandy shale below 3,430 feet. A core taken from 3,395 feet carried oil stains.

East Texas Fields

(Continued from Page 75)

Gregg County—Kilgore Area

Continental Oil No. 5 A. A. King, 3,674-75 feet, 39 bbls. Gulf Oil Corp. No. 40 G. W. Culver, 3,542-54 feet, 68 bbls. Overton Refining Co. No. 2 Crim, 3,547-58 feet, 28 bbls. Phillips Petroleum Co. No. 6 I.&G.N.R.R., 3,562-91 feet, 40 bbls.

Rusk County—Kilgore Area

Devonian Oil No. 43 R. A. Motley, 3,737-52 feet, 70 bbls.

Rusk County—Joiner Area

Humble Oil & Refining Co. No. 21 P. R. DeGuerin, 3,720-33 feet, 50 bbls.; No. 10-B W. P. Moore, 3,705-06 feet, 85 bbls.

Smith County—Joiner Area

J. C. Hawkins No. 2-B J. H. Moore, 3,750-51 feet, 34 bbls.

Upshur County—Longview Area

Stanolind-Falcon No. 2-E C. B. Everett, 3,635-38 feet, 31 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Anderson County

J. Dunbar No. 1 Pitts. 4,037-4,119 feet, 132 bbls. F. H. E. Oil Co. No. 1 H. McKinzie, 5,331-38 feet, 59 bbls.

Freestone County

Amerada Petroleum Corp. No. 7 Beck, 4,002-26 feet, 212 bbls. J. L. Collins No. 4 E. P. Harwell, 4,025-39 feet, 184 bbls.

Trinity County

Taubert & McKee No. 1 First National Bank, dry and abandoned at 2,025 feet.

NORTH TEXAS COMPLETIONS

(24-hour production)

Archer County

Mahler & Lyons No. 1 E. N. Birdwell, 640-51 feet, 10 bbls. Rathke Oil Co. No. 1 C. Cowan, 1,128-30 feet, 100 bbls. Sinclair Prairie No. 1 J. A. Hood, 5,180 feet, dry. Thurmond & Lipscomb No. 2 L. F. Wilson, 4,235-50 feet, 825 bbls. W. C. Young No. 1 A. J. Demose, 1,052 feet, dry.

Clay County

W. H. Gant No. 1 B. Edwards, 6,354 feet, dry. Gwynn & Overby and others No. 1 L. H. Sanzenbach, 565 feet, dry. R. C. Hart No. 1 M. A. Stephenson, 228-32 feet, 2 bbls. C. P. Mayfield No. 1 Sanzenbacher, 810 feet, dry. Sussez Oil Corp. No. 15 C. J. Shumake, 1,124-35 feet, 202 bbls..

Baylor County

E. P. Bowel No. 1 W. H. Portwood, 1,458 feet, dry.

Cooke County

Kingery Brothers No. 5 H. Felderhoff, 1,368 feet, dry. L. C. Heydrick No. 1 F. J Franklin, 2,501 feet, dry.

Jack County

Benoil Co. No. 1 R. W. Cantrell, abandoned location. Nelson Oil Syndicate No. 5 J. E. Henderson, 2,765-2,812 feet, 200 bbls.

Montague County

Sinclair Prairie Oil Co. No. 1 J. P. Hill, 2,400 feet, dry.

Wichita County

Bridwell Oil Co. No. 8 Waggoner Brothers, 3,738-3,876 feet, 960 bbls. L. T. Burns No. 22 Sue Mitchell, 3,820-81 feet, 960 bbls. Consolidated Oil Co. No. 15 W. P. Ferguson, 3,790-3,805 feet, 1,338 bbls. E. C. Oil Co. No. 1-A A. W. Burnside A, 3,828-4,060 feet, 350 bbls. Hanlon-Buchanan, Inc., No. 4 Fassett & Tuttle B, 3,900-4,013 feet, 1,200 bbls. King Oil Co. and others No. 9 Charles Pettit, 3,720-3,800 feet, 696 bbls. W. A. Krohn No. 4 Mrs. Grace Jennings, 1,850 feet, dry. Madison Oil & Gas Co. No. 25 S. B. Burnett, 1,580 feet, dry. Mitchell and others No. 2 Sue Mitchell, 3,795-3,858 feet, 672 bbls. Panhandle Refining Co. No. 11 Reily Griffin, 1,801-05 feet, 50 bbls.; No. 3-A Reily Griffin, 3,750-3,831 feet, 432 bbls. W. H. Peckham No. 4 Waggoner Brothers, 3,743-73 feet, 768 bbls. D. W. Power and others No. 11-A L. C. Denny, 570-87 feet, 15 bbls.

Young County

F. E. Butler No. 3 R. D. Webb, 760 feet, dry. Henry Craig No. 1 R. L. Heard, 1,117 feet, dry. Horwitz & Oldham No. 1 C. J. Taack B, 5,090 feet, dry. Italio Petroleum Co. No. 1 H. M. Donnell, 3,395 feet, dry. Thomas H. Jirik No. 1 W. M. Graham, 1,095-1,101 feet, 15 bbls.

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Kansas Developments

By
DAL DALRYMPLE

Four New Barton Oil Strikes; McPherson's Chat Discovery

The newest pool opener in Barton County, Kansas, made initial state potential of 1,313 bbls. of oil in 24 hours when tested the past week. It is the Sinclair Prairie Oil Co. No. 1 Prusa, SE cor. Section 20-16-11w, a communitized wildcat test in the northeastern part of the county, located 3 miles south of the Davidson pool and about 3¼ miles northwest of the Kraft pool. Total depth was 3,352 feet in Arbuckle lime. The potential test was made with temporary pumping equipment and without benefit of acid, so it is expected production will be considerably larger when tested under more favorable conditions. Gravity of the oil was 42 degrees.

Developments of the week included completion of pool openers in McPherson and Harvey counties. In addition, other new pools were indicated in McPherson and Barton counties and extensions of several areas were near completion. Discoveries have been completed in Kansas this year at the rate of more than one a week, the Prusa strike in Barton County being listed as the fifty-third of the year. However, the actual number of pools opened will not equal that figure in the final analysis, some of the strikes being classed as extensioners of older areas. Even so, it is an imposing record that Kansas operators have made this year in view of the fact that market conditions were unsatisfactory and field operations generally were greatly reduced from the high figure of 1937 due to boom activity in Illinois.

The opening of a chat pool in McPherson County was indicated at Marylyn Oil Co. and W. H. Lassen No. 1 Dixon, NE NE NW Section 7-19-2w, about 4 miles northeast of the town of McPherson. It topped chat at 2,986 feet, had pay at 2,994-95 feet, total depth, and oil rose 400 feet in the hole in two hours, the volume later increasing to 1,000 feet. Operators were to underream, set pipe and acidize for completion.

One of the three more recent strikes in Barton County, Virginia Drilling Co., Kenneth Harris, Sam Murphy and others No. 1 Clawson, SW SW NW Section 17-20-11w, about 2 miles south of Ellinwood, found spotted saturation and oil stains in Arbuckle lime topped at 3,285 feet and cored at 3,283-96 feet. Standard tools were being rigged up for production test. Location is on a farmout from D. J. Wilson and R. S. Webb.

One and one-half miles south of the Clawson strike, A. G. Kaiser and others No. 1 Hagen, SW cor. Section 20-20-11w, opened a new producing area. It pumped 200 bbls. of high gravity oil in six hours from Arbuckle lime at 3,330 feet, total depth. Location is on a Stanolind farmout.

The other Barton County strike was Long & Johnson, Web-Son and others No. 1 Eveleigh, SW SW NE Section 3-18-14w, about 3½ miles west of Hoisington. It topped Arbuckle lime at 3,338 feet, had pay at 3,365-67 feet, total depth, and oil rose 200 feet in the hole in two hours. Casing was to be set preparatory to testing. James A. Brouk has an interest in the well, and the test was supported by the Derby, Darby, Gulf, Champlin and Mid-Continent companies. The Texas, Imo and Web-Son companies also have acreage in the area. Nearest production is in the Hoisington pool, about 6 miles to the northeast.

The Forest City basin lease play, still going strong in northwestern Missouri, has extended into neighboring sectors of Kansas, Iowa and Nebraska. Payton Anderson, Wichita geologist and operator, among the latest reported leasing in northeastern Kansas, is said to be assemblying a block in Townships 5s-17e and 5s-18e, Atchison County. Glimac Oil Co. was reported buying in the same county in Townships 6s-18e and 7s-18e. Major companies and independents are reported active in Atchison, Brown, Doniphan, Jackson, Nemeha and Shawnee counties in the Kansas sector of the basin.

Among the Wildcats

Western Kansas Oil & Refining Co. No. 1 Fraternal Aid Union, NW NE SW Section 18-17-1w, wildcat in northwestern McPherson County, made initial potential of 419 bbls. of oil daily after acidizing to open a new Chat pool. It topped Mississippi formation at 2,683 feet, total depth 2,689 feet.

E. K. Carey & Derby Oil Co. No. 1 Jones, CE½ NE NW Section 7-22-1w, was completed as a Misener sand pool opener in Harvey County. Misener sand was found at 3,278-91 feet, total depth 3,546 feet, and it was plugged back to 3,291 feet, making initial potential of 254 bbls. of oil. Arbuckle lime was topped at 3,440 feet. Location is midway between the Graber and Sperling pools.

C. L. Carlock & F. P. Cullum No. 1 Smith, C SW SE Section 11-17-25w, Ness County wildcat, was dry and abandoned at 4,804 feet, total depth.

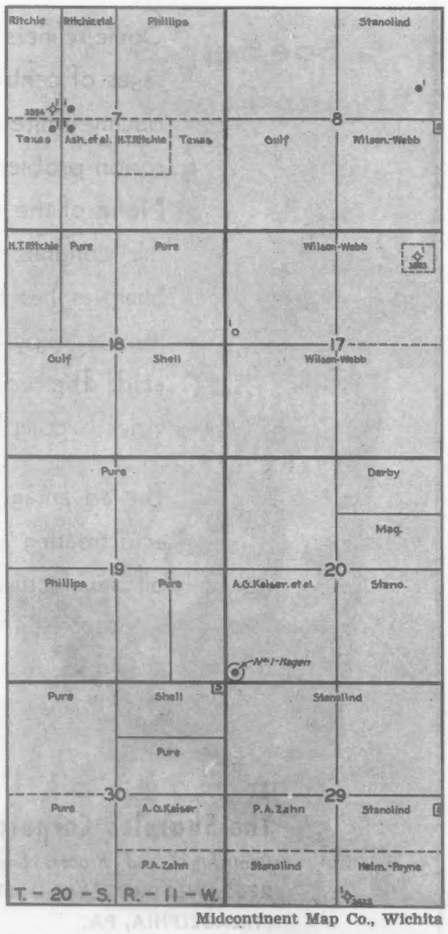
J. H. Tatlock No. 1 Proffitt, SW SW NE Section 23-20-10w, wildcat in Rice County, failed to find production and was abandoned at 3,418 feet.

Cragin, Reuscher & Turner No. 1 Adams, NW NW SE Section 22-34-30w, wildcat in Meade County, was shut down at 200 feet.

Cities Service Oil Co. No. 1 Murphy, CW½ W½ NE Section 9-19-9w, wildcat north of the Chase field in Rice County, was waiting on cement at 247 feet.

Amerada Petroleum Corp. No. 1 Kruckenberg, C NE NE Section 14-19-15w, Barton County wildcat, was building rotary rig. It is west of the Heizer pool and southeast of the Otis field.

Virginia Drilling Co. No. 1 Schlocktermeyer, SE SE NW Section 7-21-11w, Stafford County wildcat, had dug cellar. It is between the Snyder and Sittner pools.



Midcontinent Map Co., Wichita

A. G. Kaiser and others No. 1 Hagen, SW cor. Section 20-20-11w, indicated by a circle, and Virginia Drilling Co. and others No. 1 Clawson, SW SW NW Section 17-20-11w, have opened new producing areas in the Ellinwood district, Barton County

Ellis County

J. J. Hall No. 5 Oswald B, NW SW SE Section 11-12-16w, Blue Hill area, Ellis County, had Lansing-Kansas City lime pay at 3,074-94 feet, was bottomed at 3,112 feet, and made initial potential of 1,130 bbls. of oil.

Cities Service Oil Co. No. 5 Rumsey, SW NW SE Section 23-11-17w, Bemis field, found Arbuckle lime at 3,406 feet and was completed at 3,416 feet, total depth, pumping 601 bbls. of oil in 24 hours.

C. B. Davis & Glimac Oil Co. No. 1 Richards Ranch, NE NW SW Section 5-11-18w, Richards pool, was completed as a 15-bbl. pumper. It found Lansing-Kansas City lime at 3,295-3,400 feet, was bottomed at 3,657 feet and plugged back to 3,400 feet.

New operations in Ellis County: Central Petroleum Co. No. 3 Hadley, NW NE SE Section 12-11-18w, South Burnett area, moving in material; same company's No. 4 Hadley, NE NE SE Section 12-11-18w, moving in material; same company's No. 7 Hadley, SW NE SE Section 12-11-18w, building rotary rig.

Barton County

Shell Petroleum Corp. No. 3 Schneider C, SE NE NE Section 2-16-14w, Trapp field, Barton County, penetrated top of Arbuckle lime at 3,297 feet, total depth 3,321 feet, and made initial potential of 568 bbls. of oil in 24 hours.

Spencer & Yarnell No. 8 Patzner, Bloomer field, flowed 141 bbls. of oil in 24 hours after plugging back from 3,297 feet, total depth, to 3,025 feet. Lansing lime was topped at 2,950 feet.

Indian Territory Illuminating Oil Co. No. 1 Will Peter B, NW cor. Section 13-20-11w, South Silica field, topped Arbuckle lime at 3,272 feet, total depth 3,290 feet, and made initial potential of 203 bbls. of oil, after acidizing. Location is one-half mile north of South Silica production and an equal distance south of the Silica field.

Cities Service Oil Co. No. 2 Bitter C, SW SW NE Section 18-16-13w, South Trapp area, was moving in material. Derby Oil Co. No. 14 Trees, SE SW NE Section 3-17-11w, Kraft pool, was building rotary rig.

Rice County

Continental Oil Co. No. 5 Williams, in the Geneseo field, Rice County, was completed for initial potential of 2,382 bbls. of oil daily. It found top of Arbuckle lime at 3,225 feet, total depth 3,230 feet.

J. H. Tatlock No. 4 Bayer B, NW SE NW Section 7-20-10w, Silica field, topped Arbuckle lime at 3,309 feet, was bottomed at 3,317 feet, and made initial potential of 422 bbls. of oil.

New work in Rice County: Derby Oil Co. No. 5

Lewis, SW cor. Section 7-18-7w, Geneseo area, was building rotary rig; Continental Oil Co. No. 2 Lewis A, SE NW NW Section 13-18-8w, was a location; C. L. Carlock No. 1 Johnson, CE½ W½ Section 31-20-7w, Wherry pool, was a location.

Estimated Daily Production

Estimated daily production for Kansas for the week ending December 10, and for the preceding week was as follows:

	Barrels	
	Dec. 10	Dec. 3
Oxford City	1,075	1,050
Burrton	8,775	8,125
Ritz-Canton	4,025	4,075
Graber	2,300	2,025
Hollow-Nikkel	1,600	1,625
Lerado	725	700
Voshell	2,025	1,950
Wellington	2,125	2,100
Ellsworth County:		
Lorraine	1,975	1,875
Other pools	1,295	1,290
Rice-Barton counties:		
Bloomer	1,275	1,975
Chase	4,400	4,275
Geneseo	3,050	3,100
Raymond	900	850
Silica	9,100	9,750
South Silica	1,325	1,275
Keesling	775	1,175
Wherry	3,900	3,175
Miscellaneous Barton	6,985	5,670
Miscellaneous Rice	4,855	5,555
Russell County	20,975	21,295
Sedgwick County	3,905	3,850
Ellis County:		
Bemis	4,780	4,325
Miscellaneous	2,645	3,750
Kingman County	655	645
Stafford County	4,535	4,620
Greenwood County	8,825	8,950
Butler County	19,475	19,500
Other fields	19,520	19,800
Total Kansas	147,800	148,350

Ellsworth County

Continental Oil Co. No. 1 Fuller, SE NE SE Section 26-17-8w, Edwards area, Ellsworth County, made initial potential of 1,776 bbls. of oil and was completed at total depth of 3,232 feet. Top of Arbuckle lime was 3,174 feet.

Transwestern Oil Co. No. 2 Disque, NE NE SE Section 32-17-10w, Stumps field, was drilling below 279 feet.

Russell County

R. H. Shields No. 1 Owens, SE NE SW Section 34-14-13w, South Letsch area, Russell County, was dry and abandoned at 3,176 feet, total depth.

Central Petroleum Co. No. 1 Mills, SW cor. Section 34-15-13w, Gorham field, was building rig. Texon Co. No. 1 Rogg, NE NW NW Section 35-14-13w, Letsch pool, was building rig.

Cities Service Oil Co. No. 1 Eichman, SE SE SW Section 26-15-14w, set 7-inch casing on top of saturated Arbuckle lime and was rigging up standard tools. It is a north offset to the discovery well in the Schneider pool.

Western Kansas Oil & Refining Co. No. 1 Fleger, NE NE SW Section 2-15-14w, Smokey Hill pool, was a rig.

Stafford County

E. H. Moore, Inc. No. 3 Cleo Johnson, SW NW SE Section 13-24-11w, Zenith field, Stafford County, made potential of 2,790 bbls. of oil and was completed. It found Misener sand at 3,789 feet and was bottomed at 3,808 feet.

Same operator's No. 1 Johnson, SW SW NE Section 13-24-11w, was waiting on cement at 273 feet, and the No. 2 Johnson, SE SW NE Section 13-24-11w, was building rotary rig.

Harvey County

Central States Oil Co. No. 1 LeClere, CN½ S½ SE Section 18-23-3w, Burrton field, Harvey County, topped Mississippi lime at 3,250 feet, total depth 3,362 feet, and flowed 725 bbls. of oil the first 24 hours.

Bennett & Wilhelm No. 3 Gouldner, NW NW SE Section 19-23-3w, pumped 947 bbls. of oil in 24 hours from Mississippi lime found at 3,261 feet, total depth 3,368 feet.

Claude Drilling Co. No. 1 Day, SE SE NW Section 19-23-3w, found top of Mississippi lime at 3,260 feet,

(Continued on Page 94)

California Fields

(Continued from Page 70)

among which are three of Standard Oil Co. and another of the same company which is being rigged up preparatory to being deepened. Production of this field is still somewhat in excess of Umpire Pemberton's allotment but operators are expected to rectify this condition before the close of the year. Hathaway Oil Co. No. 1 Dore in the extreme southern end of the Montebello extension and south of Beverly Boulevard is still holding up in good shape as current production is averaging around 400 bbls. of 34.9-gravity oil, cutting 2 per cent, behind a 32/64-inch bean. This outpost is believed to be producing from a zone below the fourth finger of the sixth zone which is the greatest stratigraphic depth reached on top of the structure. The zone discovered by Hathaway Oil Co. may be either the seventh or eighth, but this will not be determined until one or more wells nearer the axis are carried down below the lower sixth, which is yielding excellent flowing wells. Union Oil Co. is making good progress with No. 1 Calkins, in the extreme eastern end of the western extension at 5,050 feet, but still has some distance to go before reaching the anticipated pay. This well will prove to be an important factor in determining the possibility of developing commercial production east of the fault that has been projected across the field. No. 1 Calkins is believed to be located west of the fault.

Torrance-Harbor City

Four new wells were completed in the Harbor City district of Los Angeles Basin and two former upper zone producers recompleted in the deep zone in the Lomita section of the Torrance field. A. N. Macrate completed two of the new wells finished in the Harbor City field, No. 1-1 Kupfer, pumping 120 bbls. of 29.1-gravity oil per day and No. 1 Holden, pumping 130 bbls. of 29.2-gravity oil daily. The former was bottomed at 5,272 feet but plugged back to 5,245 feet and finished with a 7-inch water string cemented at 5,105 feet and 152 feet of 5-inch liner including 137 feet of perforated. No. 1 Holden was bottomed at 5,323 feet and finished

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with a 7-inch water string landed at 5,220 feet and 125 feet of 5-inch liner including 105 feet of perforated.

R. R. Bush Oil Co. plugged No. 1 Torino back from 5,950 feet to 5,224 feet and completed it flowing 335 bbls. of clean 28.4-gravity oil per day through a 36/64-inch bean. The well, which is in the extreme northern end of the Harbor City area, is producing from the Del Amo zone from 5,148 feet to 5,224 feet. Early in the week. Padran Oil Co. completed No. 1 McEwen, flowing 145 bbls. of clean 30.2-gravity oil per day from 5,304 feet after the hole had been finished with 180 feet of 5½-inch liner including perforations at 5,205-40 feet, 5,270-90 feet and at 5,293-98 feet. In the Lomita section of the Torrance field W. P. Andrews Oil Co. completed No. 10 Kirk flowing 220 bbls. of clean 27.6-gravity oil per day through 48/64-inch and 24/64-inch beans. This well was finished with a 4¾-inch liner carrying perforations at intervals from 4,765 feet to 5,089 feet with bottom of the hole at 5,095 feet. Moon Oil Co. No. 1 Lomita in this field failed to come up to expectations as it was good for only 60 bbls. of 25.9-gravity oil daily from 5,083 feet.

Kettleman Hills

Standard Oil Co. completed two good wells in the Kettleman North Dome field this week but both were beaned back in order to keep field production within bounds. The company's No. 41-17-Q in Section 17-22-18 was completed flowing 2,450 bbls. of clean 39.5-gravity oil and 1,500,000 feet of gas per day from the Temblor, with bottom of the hole at 7,860 feet. Standard's No. 61-21-Q in Section 21-22-18 was brought in on a compressor flowing 2,135 bbls. of 37.5-gravity oil and 575 bbls. of water from the Temblor at 7,960 feet. The well is making 1,750,000 feet of formation gas per day along with the crude oil.

Canal—Ten Section

Shell Oil Co. completed another new well in the Ten Section field this week and extended the productive limits of the Canal field to the south by completing No. 47-14-A Kern County Land in Section 14-30-25 flowing 928 bbls. of clean 35.4-gravity oil and 800,000 feet of gas per day from 8,336 feet. This well extends the southern limits of production at least 660 feet. Ohio Oil Co. and Shell Oil Co., at present the only holders of productive acreage in the Canal field, are proceeding with normal development and conforming strictly with curtailment obligations. In the Ten Section field, where only Shell Oil Co. has acreage on production, the company completed No. 72-29A Kern County Land in Section 29-30-26 flowing 2,982 bbls. of clean 33.7-gravity oil and 2,670,000 feet of gas per day from the Stevens zone with bottom of the hole at 8,220 feet. Completion of this well leaves Shell with one derrick standing in the Ten Section field.

San Joaquin Basin

In the Fruitvale field of Kern County in the San Joaquin Valley area, Western Gulf Oil Co. completed No. 40-B Kern County Land in Section 22-29-27 pumping 240 bbls. of clean 21.1-gravity oil from the Kernco zone with bottom of the hole at 3,831 feet. In the older section of the Kern River field, Alfred Fuhrman completed No. 13 in Section 28-28-28 pumping 10 bbls. of 12.5-gravity oil cutting 10 per cent from 635 feet after the hole had been carried down to 672 feet and then plugged back to the completion depth because of bottom water.

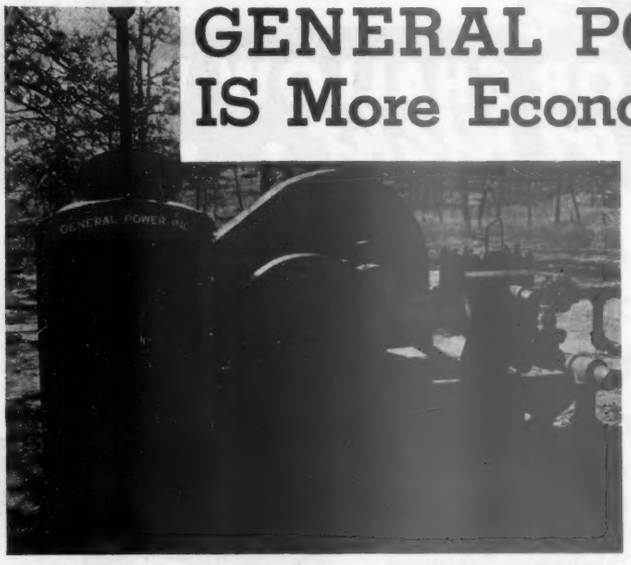
Amerada Petroleum Corp. has been drilling a series of core holes in Merced County in the San Joaquin district and if this structure survey work proves successful will undertake deep drilling. At present the company is at work about 6 miles southwest of Dos Palos. California Exploration Co. has recovered the drill pipe that has been holding up progress in its No. 1 Salisbury, a wildcat in the Buttonwillow district of Kern County, and the bit is again going ahead. Present depth is 9,060 feet in Etchegoin formation comprising for the most part a sandy shale.

Coastal Area

Tide Water Associated Oil Co. drew attention to the Ventura Avenue field by completing No. 7 Hartman flowing 910 bbls. of 29.5-gravity oil cutting 40 per cent and 926,000 feet of gas per day from the 57 zone with bottom of the hole at 11,070 feet. This is the deepest producer in the Ventura Avenue field, and while initial production showed a very high cut, the well appears to be cleaning up in good shape and may therefore be listed as a final completion. The status of this well will be determined within a few days. It was brought in flowing through a 72/64-inch bean. In the Santa Maria Valley field, F. E. Cole completed No. 18 in Section 28-10-34 flowing 2,250 bbls. of clean 15.4-gravity oil per day from 5,543 feet through open line. This well, located on the Paderewski ranch, topped the Monterey at 5,005 feet and is one of two wells in the west end of the Santa Maria Valley field that have been finished on a natural flow. The other well was Union Oil Co. No. 2 Russell.

Los Angeles Basin

Caminol Co., Ltd., has completed its No. 2-10 Dominguez in the North Long Beach field of Los Angeles Basin flowing 395 bbls. of clean 28.6-gravity oil per day through a 20/64-inch bean from 7,537 feet. Treasure Oil Co. completed No. 3 Del Rey up in the hilly area back of the Playa Del Rey field pumping 125 bbls. of 26.3-gravity oil cutting 5 per cent from 6,510 feet. This outpost was finished in the conglomerate which immediately overlies the schist basement and has a 7-inch water string cemented at 6,136 feet. In the Aliso Canyon field of Los Angeles County, Standard Oil Co. is making preparations to drill its first well on the Ward property. It will be an offset to Tide Water Associated Oil Co.'s discovery well on the Porter lease. In the Newhall field, where Barnsdall discovered a field last year, preparations are under way to make an early production test on Barnsdall's No. 4 Rancho San Francisco. This well, located in Section 26-4-17, is in the pay at 7,070 feet and should show substantial production of high-gravity oil. Seacliff Petroleum Corp. has spudded in No. 1 Golf Club, a wildcat located due west of the Montebello extension, where good production is being developed. No. 1 Golf Club is located on a topographic high and may bear watching during the course of work on the basis of showings encountered in the well drilled several years ago by Herbert L. Whiston, which showed oil sand in the bottom of the hole just before mechanical trouble forced abandonment.



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Rocky Mountain Area

By
T. R. INGRAM

Yukon Oil Co. Opens Pool in Cut Bank District, Montana

DENVER, Colo., Dec. 12.—A group of Kansas men have contracted for a 5,200-foot test to the Dakota on the West Plains structure, Logan County, Colorado, and is rigging up. There were no completions in Colorado.

Unit agreement for the operation of the Salt Creek field in Wyoming is being signed and may go into effect January 1, 1939. The Sinclair-Wyoming Oil Co. completed a good well in Lost Soldier in its No. 80 which flowed 400 bbls. in 8½ hours. The Wyore Oil Co. completed a 1,000,000-foot gasser at 212 feet in Converse County. A deep test on the Wyoming structure in Lincoln County is to be drilled in the spring. Three Sundance sand wells were authorized by the unit committee in Lance Creek, for which the Ohio. Continental, and Argo companies have released locations. Continental also made location for another Leo sand well. Completion of Continental No. 2-B Dielman has been delayed by a series of accidents.

Montana has a discovery in the Yukon Oil Co. No. 1 Lungren, 4½ miles from nearest producer in Cut Bank, swabbing 75 bbls. in five hours from the Moulton sand. One completion and two new operations were reported in Cut Bank. Kevin-Sunburst had no completions and three new operations.

Utah test on the Cane Creek dome is at critical stage.

NEW MEXICO

Westmount Oil Co. No. 1 Amerada-State, wildcat strike in the Lovington district, Lea County, New Mexico, was reported completed for initial production of 12,800,000 feet of sweet, dry gas daily. It is located 660 feet from the north and about 2,280 feet from the east lines of Section 12-17-36. Flow of gas was through 2-inch tubing set at 3,374 feet, total depth 3,986 feet. Shut-in pressure was 2,000 pounds, flowing pressure 950 pounds. Production is being used as fuel for other operations in the area. Completion as a gasser was necessary to hold state lease which would have expired December 6.

Completions of the past week included eight oil wells and a gasser in Lea County and five oil wells in Eddy County. Four of the Lea County wells are in the Vacuum field. Lea County completions were:

Magnolia Petroleum Co. No. 2-M State, C NW NW Section 34-17-35, Vacuum field, flowed 133 bbls. of oil naturally in four and one-half hours from pay topped at 4,420 feet, total depth 4,610 feet.

Helmerich & Payne No. 1 State G-36, C NW SW Section 36-17-35, was bottomed at 4,950 feet with pay topped at 4,890 feet, and pumped 57 bbls. of oil and 3 bbls. of water daily.

Magnolia Petroleum Co. No. 19 State-Bridges, C NW NW Section 24-17-34, flowed 62 bbls. of oil in four hours. Top of pay was 4,560 feet, total depth 4,700 feet. Later the well flowed 165 bbls. of oil in 24 hours.

Texas Co. No. 1-W State, C SW SE Section 13-17-34, found pay at 4,476 feet, was bottomed at 4,680 feet, flowed 8 bbls. of oil in two hours and died.

Continental Oil Co. No. 4 Lockhart B-31, C S half SE SE Section 31-21-36, Eunice field, topped pay at 3,860 feet, total depth 3,874 feet. It flowed 70 bbls. of oil an hour on two-hour test through three-fourths inch choke on 2-inch tubing set at 3,864 feet. Gas gauged 537,000 feet.

Shasta Oil Co. No. 3 Woolworth, NE SE NW Section 28-24-37, Langlie-Jal district, was completed for 66 bbls. of oil daily. Top of pay was 3,492 feet, total depth 3,585 feet.

Twin Oil Corp. No. 2 Hare, C NW SW Section 33-21-37, Hardy area, was bottomed at 3,748 feet and flowed 86 bbls. of oil in 24 hours from pay topped at 3,684 feet.

Olean Petroleum Co. No. 1 Brunson, SW SE SE Section 4-22-37, flowed 77 bbls. of oil naturally in 24 hours through tubing from pay topped at 3,654 feet, total depth 3,738 feet.

J. M. Murray, trustee, No. 1 Fanning, SE SW NW Section 33-23-37, Mattix area, had gas sand at 3,415-34 feet, total depth 3,486 feet. It gauged 62,000,000 feet of sweet gas daily.

Completions in Eddy County were Red Lake Oil Co. No. 1 Vandagriff, SE SE NE Section 20-17-28, Artesia district, topped pay at 1,931 feet, total depth 1,964 feet, flowed 90 bbls. of oil daily, naturally and by heads.

Franklin Petroleum Corp. No. 1-E McIntyre, NW NE SE Section 20-17-30, Jackson field, flowed 40 bbls. of oil daily by heads through tubing from pay found at 3,137 feet, total depth 3,264 feet.

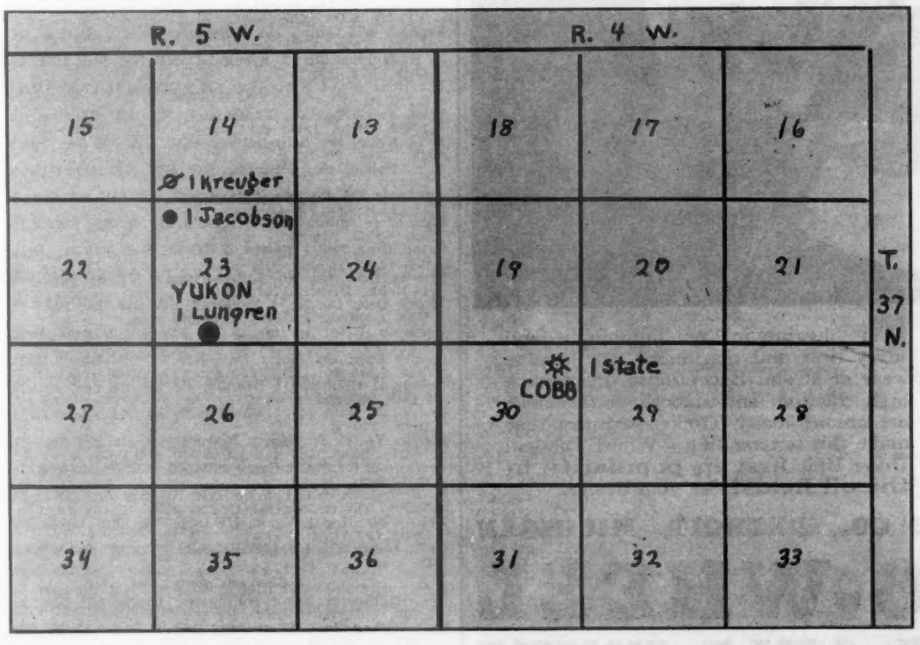
Premier Petroleum Corp. No. 2-B Beeson, SW NW SW Section 27-17-30, had pay at 3,137 feet, total depth 3,264 feet, and flowed 60 bbls. of oil daily through tubing.

Same company's No. 1-E Maddren-Beeson, NE SW SE Section 28-17-30, had pay at 3,180 feet, was bottomed at 3,418 feet and flowed 8 bbls. of oil daily.

Barney Cockburn No. 1 State, C SW NE Section 16-18-31, pumped 30 bbls. of oil in 24 hours from pay found at 3,263 feet, total depth 3,303 feet.

Lea County

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Sec. 33-16-36. Drlg. 4,570 ft.
Skelly Oil Co. No. 1-N State, C NW NE Sec. 36-16s-36. Drlg. 2,275 ft.
Amerada Pet. Co. No. 1-LA State, C SE SW Sec. 1-17-36. Drlg. 1,770 ft.
Amerada Pet. Corp. No. 5-VA State, C NW NW Sec. 22-17-35. T.D. 4,653 ft.; tstg.
Cities Service No. 1-L State, C SE SW Sec. 15-17-35. T.D. 4,854 ft.; D.S.T.; no shows.
Continental Oil Co. No. 1 State H-22, C SW SE Sec. 22-17-34. Drlg. 2,945 ft.
Continental Oil Co. No. 3 State H-35, C NW NE Sec. 35-17-34. T.D. 4,700 ft.; rng. tbg.
Continental Oil Co. No. 1 State 1-7, NE NW NE Sec. 7-17-34. T.D. 4,895 ft.; retreated and tstg.
Devonian Oil Co. No. 1 State-Ritts, C NW NW Sec. 21-17-34. T.D. 4,746 ft.; swb. 3 B.O.P.H.; tstg.
Geo. F. Getty, Inc., No. 4-F State, C NE NW Sec. 36-17-34. Drlg. 1,465 ft.
Humble O. & R. Co. No. 2-J State, C NW SW Sec. 19-17-35. R.U.R.
Magnolia Pet. Co. No. 2-G State, C SE NE Sec. 24-17-34. T.D. 4,350 ft.; drlg. plug.
Magnolia Pet. Co. No. 3-M State, C SW NW Sec. 34-17-35. C.&P.
Magnolia Pet. Co. No. 20 State-Bridges, C SW NW Sec. 24-17-34. Drlg. 3,168 ft.
Magnolia Pet. Co. No. 21 State-Bridges, C NE NE Sec. 23-17-34. Drlg. 1,716 ft.
Maljamar O. & G. Co. No. 1-B Baish, C NE NW Sec. 22-17-32. Drlg. 3,938 ft.
Maljamar O. & G. Co. No. 1-B Mitchell, C NE SE Sec. 20-17-32. R.U.R.
Maljamar O. & G. Co. No. 6 Mitchell, C SW NE Sec. 20-17-32. W.O.C. 3,600 ft.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. T.D. 4,125 ft.; swbg. 25 B.O.P.D.
Ohio Oil Co. No. 3 State-McCallister, C SW SW Sec. 25-17-34. Drlg. 3,553 ft.
Phillips Pet. Co. No. 2 Hale, C NE SW Sec. 35-17-34. Drlg. 4,647 ft.
Phillips Pet. Co. No. 3 Hale, C SE SE Sec. 35-17-34. Drlg. 3,995 ft.
Phillips Pet. Co. No. 1 Mabel, C SW NW Sec. 35-17-34. T.D. 4,715 ft.; prep. to shoot.
Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. Drlg. 3,971 ft.
Phillips Pet. Co. No. 13 Santa Fe, C NW NW Sec. 28-17-35. Drlg. 3,926 ft.
Phillips Pet. Co. No. 14 Santa Fe, C SE SE Sec. 20-17-35. T.D. 4,177 ft.; tstg.
Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. Cg. 4,340 ft.
Phillips Pet. Co. No. 17 Santa Fe, C SE SW Sec. 26-17-35. Drlg. 3,825 ft.
Phillips Pet. Co. No. 18 Santa Fe, C NW NE Sec. 34-17-35. C.&P.
Phillips Pet. Co. No. 19 Santa Fe, C NW NE Sec. 35-17-35. Drlg. 3,748 ft.
Phillips Pet. Co. No. 20 Santa Fe, C SW SW Sec. 27-17-35. Loc.
Shell Pet. Corp. No. 2-B State, C NE SE Sec. 30-17-35. Drlg. 4,662 ft.
Shell Pet. Corp. No. 2-F State, C SE SW Sec. 29-17-35. W.O.C. 4,320 ft.
Shell Pet. Corp. No. 1-I State, C SW NW Sec. 29-17-35. T.D. 4,753 ft.; C.O. at 4,753 ft.
Shell Pet. Corp. No. 1-N State, C NW NE Sec. 28-17-35. Drlg. 4,425 ft.
Shell Pet. Corp. No. 1-O State, C SE NE Sec. 34-17-34. T.D. 4,785 ft.; swb. and F. 48 B.O. in 10 hrs.
Shell Pet. Corp. No. 1-S State, C NE SE Sec. 21-17-35. T.D. 4,745 ft.; S.D. repairs.
Shell Pet. Corp. No. 1-V State, C NE SE Sec. 21-17-35. W.O.C. 4,340 ft.
Standard Oil Co. of Texas No. 1 State Lease 5, C NW NW Sec. 27-17-35. T.D. 4,654 ft.; F. 160 B.O. in 17 hrs.



Yukon Oil Co. discovery well in North Cut Bank, Montana, 5½ miles north of nearest gas well in Cut Bank

Standard Oil Co. of Texas No. 1 State Lse. 6, C NW SW Sec. 34-17s-35. R.U.R.
Standard Oil Co. of Texas No. 2 State Lse. 3, C NW NW Sec. 32-17-35. Drlg. 400 ft.
Standard Oil Co. of Texas No. 3 State Lse. 4, C NW SE Sec. 27-17-35. Drlg. 1,731 ft.
Standard Oil Co. No. 2 State, Lse. 5, C SE NW Sec. 27-17-35. Drlg. 4,106 ft.
Stanolind O. & G. Co. No. 1 State, C SW SE Sec. 1-17-36. Drlg. 320 ft.
Texas Co. No. 1-T State, C SE NE Sec. 25-17-34. T.D. 4,725 ft.; swbg. 4 B.O.P.H.
Texas Co. No. 1-V State, C NE NW Sec. 34-17-34. T.D. 4,790 ft.; S.I.
Twin Oil Corp. No. 1-D State, C SW NE Sec. 30-17-35. W.O.C. 1,625 ft.
Westmount Oil Co. No. 1 Amerada, C NW NE Sec. 12-17-36. T.D. 3,986 ft.; gauged 13,000,000 ft. gas.
Westmount Oil Co. No. 1 State, C SE NW Sec. 30-17-35. T.D. 4,728 ft.; S.I.
Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. Drlg. 4,044 ft.
Texas Co. No. 3-R State, C SE NE Sec. 6-18-35. Drlg. 3,510 ft.
Amerada Pet. Co. No. 7 Andrews, C E½ NE NE Sec. 23-20-36. Drlg. 730 ft.
Continental Oil Co. No. 3 Britt B-15, C W½ NW SW Sec. 15-20-37. T.D. 3,836 ft.; pulling tbg.
Continental Oil Co. No. 2 Meyer B-31, C NE SW Sec. 31-20-38. Drlg. 3,836 ft.
Continental Oil Co. No. 8 Reed B-23, CEL SW NE Sec. 23-20-36. Drlg. 3,065 ft.
Continental Oil Co. No. 2 State C-16, SW SW NW Sec. 16-20-37. Rng. csg. 3,745 ft.
Continental Oil Co. No. 2 State A-36, NE SE Sec. 36-20-36. T.D. 3,790 ft.; F. 6 B.O.P.H.
J. M. Rush No. 3 State A-20, NW SW SE Sec. 20-20-37. T.D. 138 ft.; W.O. rot.
J. M. Rush No. 4 State A-20, NW SE SE Sec. 20-20-37. Loc.
Texas Co. No. 16 Lieu-Lands, C NE SW Sec. 20-20-37. Loc.
Aloco Oil Co. No. 1 Carson, C SW SE Sec. 28-21-37. Drlg. 2,935 ft.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. Drlg. 3,757 ft.
Continental Oil Co. No. 3 Lockhart B-1, C NW SE Sec. 1-22-36. T.D. 280 ft.
Continental Oil Co. No. 6 Lockhart A-18, C W½ NW SW Sec. 18-21-36. R.U.R.
Gulf Oil Corp. No. 3-D Arnott-Ramsey, C NE NE Sec. 33-21-36. T.D. 3,885 ft.; tstg.
Magnolia Pet. Co. No. 1 Carson, C SE NE Sec. 31-21-37. S.D.; wtr. 2,141 ft.
Magnolia Pet. Co. No. 3 Hardy, C NE NW Sec. 29-21-37. T.D. 3,807 ft.; F. 75-100 B.O.P.D. by heads.
J. M. Rush No. 1 Weatherly, C SW NW Sec. 21-21-37. R.U.R.
Stanolind O. & G. Co. No. 4-C Hill, C SE NW Sec. 5-21-37. T.D. 3,780 ft.; F. 75 B.O.P.D. by heads while C.O.
Twin Oil Co. No. 2 State, C SW NW Sec. 32-21-37. Drlg. 2,665 ft.
Francis C. Wilson No. 2 State, C NW NE Sec. 7-21-35. T.D. 3,860 ft.; P.B. 3,858 ft.; ucdz. and swb. 25 B.O. in 12 hrs.
J. C. Clower No. 1-B Manda, NE NE NW Sec. 28-22-37. Drlg. 2,695 ft.
Devonian Oil Co. No. 2 Christmas, SE SW SE Sec. 28-22-37. Loc.
Gulf Oil Corp. No. 1-F Mattern, C NW NE Sec. 1-22-36. T.D. 3,805 ft.; acdz. and F. 22 B.O. in 24 hrs.
Humble O. & R. Co. No. 4 Greenwood, C SE SW Sec. 9-22-37. W.O.C. 3,609 ft.
Ohio Oil Co. No. 2 Sanders, NW NW Sec. 1-22-36. T.D. 3,760 ft.
Olean Pet. Co. No. 2 Brunson, SW NE SE Sec. 4-22-37. Drlg. 2,895 ft.
Olean Pet. Co. No. 2 Farrell, SW SE SE Sec. 22-22-37. Drlg. 451 ft.
Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. T.D. 3,692 ft.; F. est. 250 B.O.P.D.
Lem Peters No. 3 L. J. May, C NE SE Sec. 27-22-37. Rng. csg. 3,347 ft.
Shell Pet. Corp. No. 4 Grizzell, C SW SE Sec. 8-22-37. Rng. csg. 3,562 ft.
Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. T.D. 3,752 ft.; prep. to test.
Twin Oil Co. No. 1-C State, C SE NE Sec. 17-22-37. R.U.R.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; S.D. repairs.
Great Western Prod. No. 2-B Leonard, C NW NW Sec. 32-23-37. Loc.
Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. 3,715 ft.; P.B. 3,675 ft.; tstg.
Skelly Oil Co. No. 4 Simms, C NW NW Sec. 3-23-37. T.D. 3,622 ft.; F. 127 B.O. in 18 hrs.
Texas Pacific Coal & Oil Co. No. 7-A State, NW NW NW Sec. 32-23-36. T.D. 3,730 ft.; spraying est. 15 B.O.P.D.
Montecito Oil Corp. No. 1 Woolworth, NE SE SW Sec. 33-24-37. Loc.
Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. Drlg. 2,480 ft.
Phillips & Pure No. 4 Woolworth, C NW SE Sec. 33-24-37. Loc.
Repollo Oil Co. No. 1 State, 157-C, SW SW SE Sec. 32-24-37. R.U.R.
Schermerhorn Oil Co. No. 3 Woolworth, NW NW SE Sec. 28-24-37. Drlg. 3,470 ft.
Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. Drlg. 3,345 ft.
Weier Drlg. Co. No. 2 Woolworth, NE SE SW Sec. 28-24-37. Drlg. 3,200 ft.
Sam Weiner No. 2 Woolworth, SW NW SW Sec. 33-24-37. C.&P.
Anderson & Prichard No. 4 Carlson-Harrison, NE SE NE Sec. 27-25-37. T.D. 3,349 ft.; shot and C.O.
Anderson & Prichard No. 4 Wells, C NW NW Sec. 5-25-37. T.D. 3,550 ft.; shot and F. 14 B.O.P.H.
Culbertson & Erwin No. 2 Henry, SW SE SW Sec. 26-25-37. R.U. mch.
Geo. F. Getty No. 1-G State, NW NW NW Sec. 2-25-37. S.D. repairs 2,535 ft.
Gulf Oil Corp. No. 5 Stuart, C NE NE Sec. 10-25-37. Drlg.
Italo Pet. Corp. No. 1 Carlson A-23, NW NW SW Sec. 23-25-37. Drlg.
Italo Pet. Corp. No. 1 Carlson B-27, NE NW NE Sec. 27-25-37. T.D. 3,364 ft.; P.B. 3,351 ft. to test.
Italo Pet. Corp. No. 2 Carlson B-27, NE NE SE Sec. 27-25-37. Drlg. 3,255 ft.
Italo Pet. Corp. No. 1 Indiana Pet. Corp., NE NE NE Sec. 6-25-37. Drlg.
Richmond Drlg. Co. No. 1-A State, C NW SW Sec. 2-25-37. Drlg. 1,895 ft.
Sam Weiner No. 3 Smith, C N½ NE SE Sec. 4-25-37. T.D. 2,890 ft.; fsg. tools.

Eddy County

Carper Drlg. Co. No. 3 Robinson, SW SW SE Sec. 25-16-31. T.D. 3,854 ft.; 1,000 ft. O.I.H.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. T.D. 3,950 ft.; swedging.
Fullerton Oil Co. No. 3-A Johnson, C NW SW Sec. 35-16-31. T.D. 4,259 ft.; to test.
Fullerton Oil Co. No. 4-A Johnson, C SW NW Sec. 35-16-31. Loc.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. T.D. 3,553 ft.; F. 85 B.O. and S.I.
J. O. & J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.
English & Harmon No. 1 Stogner, C NW SE Sec. 31-17-31. Drlg. 1,371 ft.
J. E. Hughes No. 1 Brooks, C NE NE Sec. 19-17-28. Drlg. 571 ft.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. Drlg. 2,710 ft.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. Drlg. 1,085 ft.
F. G. Keyes No. 3 Red Gulch, NW NW NE Sec. 16-17-28. Drlg. 20 ft.
C. S. Powell No. 1 Smith, NW NW NE Sec. 6-17-29. Loc.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. S.D.O. 979 ft.
Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. S.D.O. 360 ft.
Paton Bros. No. 1 Erwin, C SE SE Sec. 5-18-31. Drlg. 955 ft.
Rhodes Drlg. Co. No. 1 Swearingan, NE SE NW Sec. 14-18-31. Drlg. 2,170 ft.
Worth Drlg. Co. No. 1 Taylor, C SW SW Sec. 12-18-31. T.D. 3,600 ft.; swb. 25 B.O. and shot.
Yates et al No. 1 Yates, C NW SW Sec. 6-18-30. Drlg. 2,546 ft.
Carper Drlg. Co. No. 1 Day, NE NE NE Sec. 3-19-21. T.D. 2,748 ft.; P.B. 2,695 ft.; swb. 50-60 B.O.P.D.
George E. Robb No. 1 Cannon, NE SW SE Sec. 4-19-30. S.D.O. 200 ft.
George E. Robb No. 1 Vandagriff, SW NE Sec. 6-19-31. Drlg. 275 ft.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. R.U. mch.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,855 ft. sd.; S.D.O.
Neil Wills No. 1 Vyall, NE SE NW Sec. 13-21s-26e. Drlg. 490 ft.
F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. Drlg. 2,845 ft.

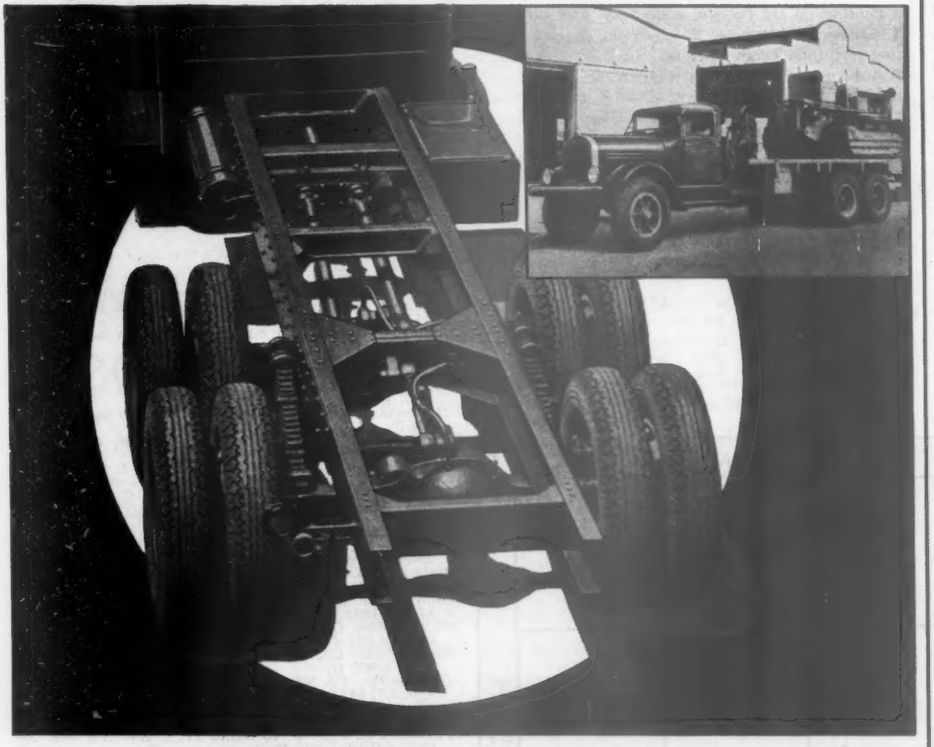
Chaves County

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 770 ft.; S.D. for csg.
E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,281 ft.; S.D.O.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.

BUILT FOR OIL FIELD DUTY



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THE TIMKEN-DETROIT AXLE CO., DETROIT, MICHIGAN

TIMKEN 6-WHEEL TANDEM DRIVE AXLE UNITS

James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27-7s-35e. Cg. 4,763 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e Drlg. below 800 ft.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. S.D. 4,450 ft.

McKinley County

Pet. Products Corp. No. 5 Santa Fe, SW NE NW Sec. 1-17-9w. Cmtd. 6⅝-in. 1,604 ft.; W.O.C.
S. Dysart No. 3-A Govt., NE NW NE Sec. 14-14n-10w. Cmtd. 12½-in. 1,320 ft.; 100 ft. sat.
Pet. Products Co. No. 3 Santa Fe, NE NW Sec. 1-17n-9w. Spdg.

Rio Arriba County

Oil City Pet. Co. No. 2 Wirt-Sanchez, C Sec. 12-31n-2e. M.I.

San Juan County

Continental Oil Co. No. 85 Rattlesnake, CEL SW NE Sec. 2-29n-19w. Cmtd. 8⅝-in. 73 ft.; W.O.C.; (first report).
Goodrun & Vincent No. 3 Hare, SW NE Sec. 23-29n-11w. Drlg. 550 ft.
San Juan O. & G. Co. No. 2 Cassidy, NW NW SW Sec. 18-29n-11w. Drlg. 265 ft.
Kutz Deep Test, Inc., No. 1 Govt., C NW NW Sec. 28-28n-10w. Cmtd. 20-in. at 80 ft.; W.O.C.
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. 625 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. Drlg. bl. sh. 830 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,885 ft.; W.O. csg.; S.O. in Farmington sd. but will D.D. to Picture Cliff.
Goodrun & Vincent No. 2 Hare, SE SE Sec. 23-29n-11w. T.D. 1,690 ft.; S.G. 1,510-40 ft.; coal 1,540-50 ft.; cmtd. 5⅛-in. 1,500 ft.; W.O.C.
Goodrun & Vincent No. 1 Seltzinger, NE NW SE Sec. 23-29n-11w. Drlg. 680 ft.
Ted Whetstine No. 1 McGee, NW NW Sec. 20-30n-11w. S.D. 434 ft. for mat.
Bullock & Noland No. 1 Bunce, SW SE Sec. 24-29n-11w. Drlg. 1,023 ft.
San Juan O. & G. Co. No. 1 Cassidy, C SE SE Sec. 19-29n-11w. Drlg. 828 ft.

San Miguel County

Southwest Drlg. Co. No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,450 ft.; prep. run 13⅜-in. for W.S.O.

Socorro County

Central New Mexico Oil Co. No. 1, Belen gr., SE NW Sec. 16-3n-1e. S.D. 2,965 ft. after rng. 12½-in.

Torrance County

Drice Co. No. 1 Garland, NE SE NE Sec. 32-7n-7e. S. D.O.; H.F.W. at 1,405-13 ft.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE Sec. 32-7n-7e. Drlg. 1,080 ft.
Chief O. & G. Co. No. 1 Lee, NW NW SW Sec. 12-6n-7e. T.D. 2,215 ft.; C.O. 300 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW Sec. 23-7n-1e. Taken over by C. M. Joiner. M.I. rotary equip.
C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 840 ft. (C.D.); W.O. title adj.

COLORADO

Adams County

J. B. Furstenberg et al No. 1 Hills, SE SE SE Sec. 27-3s-64w. S.D. 4,370 ft.

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; prep. to run 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. S.D. 1,840 ft.
Axelind Oil Co. No. 1, Sec. 11-32n-2e. Drlg. below 700 ft.

Boulder County

Reynolds & Roher No. 1 Thomas, SW SW Sec. 17-1n-70w. Spdg. 50 ft.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. Drlg. 7,147 ft.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. S.D. 2,460 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE Sec. 36-7s-88w. S.D. 2,008 ft. for winter after W.S.O. with 5⅛-in. at 1,757 ft.

La Plata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 2,250 ft.; U.R. 8¼-in. from 1,860 ft. to S.O.G. at 2,140 ft.

Las Animas County

Hulme-Johnston-Allison No. 1 Azar, SE SE NW Sec. 27-34s-58w. Drlg. 860 ft.

Logan County

The West Plains Development Co. has let contract to J. F. Norton, Fall City, Neb., for a 5,200-foot test, or through the Dakota series, for its No. 1 Sheldon, SE NW SE Section 3-10s-55w, near West Plains, in Logan County, on a structure of the same name which was geologized and mapped by the late C. T. Lupton of Denver. Mr. Lupton thought so well of the structure that he purchased some acreage outright and acquired extensive royalties. Derrick for the operation was erected several months ago and was purchased from Helmerich & Payne, who had just completed a rotary well in eastern Colorado. It is rigging up and

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will be drilled with standard cable tools. The company has a large block comprising close to 40,000 acres and plans to drill two wells. The one getting under way is on the north dome and the second well will be drilled on the south dome. The company is controlled by a group of Kansas men. Leo Osborn, of Sidney, Neb., president of the company, was in Denver this week making final arrangements for the test.

West Plains Dev. Co. No. 1 Sheldon, SE NW SE Sec. 3-10s-55w. R.U.C.T.

Moffat County

C. R. Privett, whose No. 1 Sutton is drilling on the Dry Lake structure, 15 miles northwest of the Iles dome, reports that the well is bottomed at 996½ feet and the top of a sand, presumably the Dakota, was encountered at 994 feet. The sand was hard and tight, he stated. At 996 feet he said there was a show of oil. The hole was then deepened 6 inches and the show increased. He states that the well then was shut down for orders and an 8-inch gate valve was shipped in to be installed before drilling was resumed. He stated that he did not know how much oil there was in the hole. From an independent source the information was obtained that there have been good shows in the Mancos shale which lies just above the Dakota.

Stanolind O. & G. Co. No. 35-SD Parkinson, SE SE NE Sec. 22-4n-92w. T.D. 3,483 ft.; cmtd. lnr.; perf. at 3,480 ft.; tstg.
Isenberg-Parker-Myers No. 1 Myers-State, NW SE NE Sec. 36-4n-103w. Drlg. 465 ft. in soft pink L.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 996½ ft.; W.O. equip.
MacKinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. Cmtd. 8¼-in. on bttm. at 3,035 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. Drlg. 4,917 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,558 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,434 ft.; C.O. to top of tools at 5,000 ft.

Pueblo County

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 870 ft. for csg.
Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. T.D. 1,900 ft.; U.R. 6¼-in. 20 ft. off bttm.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. T.D. 3,550 ft. fish. rec.; C.O.

Routt County

The Steamboat Springs Drilling Syndicate No. 1 Brown, reported abandoned in the top of the red beds at 1,775 feet, will be drilled deeper.

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. T.D. 1,775 ft.; C.O. to D.D.

WYOMING

Big Horn County

Taylor Oil Co. No. 1 Sheets-Govt., SE NE SE Sec. 9-55n-96w. Drlg. 1,250 ft.; will S.D. for winter; wtr. shortage.
Yale Pet. Co. No. 2 Allen, Lot 52 (approx. SW NW SW Sec. 34-56n-97w). Drlg. Madison L. 3,751 ft.
A. L. Rankin No. 1 Karjala-Rankin, C SW NW Sec. 10-54n-94w. T.D. 590 ft.; P.B. to Embar sd. 555-75 ft. and acd. 500 gal. without results; S.D.O.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. Cmtd. 8¼-in. at 1,027 ft.; W.O.C.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,718 ft.; sulfur wtr. in Morrison at 2,695-2,710 ft.; will U.R. 10-in. from 2,555 ft.
John H. Thomas No. 1 Govt., SW SW SE Sec. 3-54n-94w. Drlg. 920 ft.

Campbell County

Fyre & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. Landed 5⅞-in. on bttm. at 723 ft. and S.D.

Carbon County

Ohio Oil Co.-California Co. No. 7 Union Pacific-Johnson, CEL NE SW Sec. 23-21n-79w. Rig; W.O. rot.
Sinclair-Wyo. Oil Co. No. 4 Mahoney, CNL NE SW Sec. 34-28n-88w. Drlg. r.b. 3,795 ft.
Ohio Oil Co. No. 3-A Baker, SW NW SW Sec. 3-23n-79w. T.D. 2,242 ft.; 6⅝-in. 2,218 ft.; may D.D.; rng. 50 ft. higher than disc. well.
Ohio Oil Co.-California Co. No. 5-A Kyle, C NW NE Sec. 26-21n-79w. T.D. 5,661 ft.; 7-in. 5,627 ft.; tstg.; flwg. by heads; made 60 B.P.D. on first test.
Producers Oil Co. No. 1 Lake Valley, 200 ft. CNL Sec. 14-20n-88w. S.D. 1,916 ft.

Converse County

The Wyore Oil Co. No. 1 Nieman, NE NW NE Section 12-31n-70w, Shawnee district, was completed at 212 feet for 1,000,000 feet of gas per day. It is a diagonal offset to the New Era No. 2 Boot, completed several months ago for 1,500,000 feet. The Wyore company, composed of Oregon people and headed by Lee Daniels, has taken over the New Era Fuel Co. Gaspar lease in Section 25 and has made a location for its No. 3 Mary Gaspar, an offset to No. 2, which was drilled by the New Era company to 670 feet, where it was completed, but not tested. It is estimated good for 40 bbls. at 655-60 feet and the new operator is cleaning out to put on production.

Wyore Oil Co. No. 3 Gaspar, SW Sec. 25-32n-69w. Loc.; (first report).
John Ackard No. 1 Carey, SW NW SW Sec. 19-33n-73w. Drlg. 700 ft.
Chas. Wheeler et al No. 1 Fitzhugh, NW Sec. 19-31n-71w. Drlg. r.b. 200 ft.; 10-in. on bttm.
H. O. Emery et al No. 2 Roberts, C SW SE Sec. 2-31n-70w. Drlg. 254 ft.; S.G.
Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 640 ft. for csg.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. T.D. 2,390 ft.; rmg. 10-in. from 1,760 ft. to bttm.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. T.D. 483 ft.; prep. to run csg.
New Era Fuel Co. No. 2 Mary Gaspar, CNL NW SW Sec. 25-32n-69w. S.D. 670 ft. without tstg.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. T.D. 2,525 ft.; U.R. 8¼-in. for W.S.O.
Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. Drlg. 150 ft.
Dr. Harvey No. 1 Granville-Tinnin, NE NE SE Sec. 6-31n-69w. Drlg. 270 ft.

Fremont County

Ben Stewart No. 1 Darnell, NE SE Section 26-3n-1w, in the Pilot Butte field, was dry at 2,245 feet, total depth, and was plugged back to sand at 765 feet and completed as a water well.

Lincoln O. & G. Co. No. 3 Tribal, SW SW SE Sec. 23-1s-1e. S.D. 55 ft.
Frank Pouppirt No. 1 Fidelity Tr., SW NE SW Sec. 27-3n-1w. S.D. 1,168 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. S.D. 3,430 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. S.D. 1,150 ft.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. S.D. 1,200 ft.; S.O. 1,095 ft.

Hot Springs County

Freudental et al No. 7 Patd., NE Tr. 51-B, Sec. 21-43n-92w. Drlg. 275 ft.; (Kirby Creek district).
Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. S.D. 1,800 ft.

Lincoln County

A deep test on the Wyoming structure in the Thompson plateau district is scheduled for next spring under a unit agreement approved by the Secretary of the Interior on October 26, 1938, which names Miller Robert Taylor as the operator. Mr. Taylor and the Midwest Refining Co. blocked up the structure in 1927-1928 and after extensive geological work, the Mountain Oil Corp. undertook the drilling of a well to 4,000 feet in fractional Section 36-25½-115w, to which the Midwest, Mountain Fuel Supply Co., and the Texas Co. contracted to pay bottom-hole money. The test was drilled to 1,400 feet in 1930 under Mr. Miller's management when he resigned to give his attention to development in the Greasewood area in Colorado. The company then continued to 1,933 feet where operations were suspended.

In 1937 Mr. Taylor proceeded with the reblocking of the acreage which was followed by a unitization agreement approved by the Interior Department. The unit comprises 8,550 acres, a solid block except for a 70-acre tract of school land which the Wyoming State Land Board will offer at auction this month with a provision that it is to be included in the unit.

The plateau is defined within three major overthrust fault lines, namely, the Absaroka, Thompson, and Darby, all of which intersect. On the east side of the Darby fault are the La Barge and Dry Piney fields. Due to the nonpresence of source material necessary for the generation of oil in the Tertiary from which the La Barge production comes, it is the theory of a number of geologists that the production in this field and at Dry Piney finds its way into stray sands by seepage through fissures in the Darby fault from the older beds which underlie the Thompson plateau. Several of the local highs on the Wyoming anticline, a major uplift which traverses western Wyoming for several hundred miles, have been tested by major companies, but none of these were drilled to the sands in the Pennsylvanian and Mississippian, which are productive in other Wyoming fields. It is planned to resume drilling in the old well if the hole is found to be in good shape, or start another well at the surface.

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. T.D. 1,090 ft.; U.R. 10-in.

Natrona County

General Pet. Corp. No. 2 State, NW SE NE Sec. 16-35n-77w. Drk.; foundations run.
General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Cg. 6,915 ft.; top Wall Ck. form. 6,840 ft.; drill in transitory form. above first Wall Ck.
Stanolind O. & G. Co. No. 29 Tensleep, C SW NW Sec. 35-40n-79w. T.D. 3,990 ft.; cmtd. 6⅝-in. lnr. at 3,660-3,984 ft.; perf. and tstg.

Niobrara County

The board in charge of the unit operation of the Sundance sand in Lance Creek has authorized the drilling of three more wells to that horizon, one each by the Ohio Oil Co., the Argo Oil Co., and the Conti-

(Continued on Page 92)

North Louisiana, Arkansas

Promising Wildcats in Big Lime District in Arkansas

By GEORGE WEBER

SHREVEPORT, La., Dec. 12.—The outstanding development of the past week in the tri-state area was the possible discovery of two new Big lime fields in South Arkansas. With two wildcats, each in the top of the Smackover lime formation, testing and coring, attention was directed sharply to Columbia and Union counties.

In addition to the two prospective field discoveries, the Village field of Columbia County gained another good oil well, and activity is gaining in the Smackover and Champagnolle areas of Union County, North Louisiana developments centered mainly in the Cotton Valley field of Webster Parish, and in the Shreveport field of Caddo Parish.

Arkansas Strikes

Tide Water Associated Oil Co. and Seaboard Oil Co. No. 1 Beene, C SE NW Section 15-18-19, cored the top of porous lime at 8,201 feet and the base at 8,226 feet. The section was soft, and only 2½ feet was recovered, showing porous lime with oil and gas saturation. No drill stem test was made. Upon coring ahead, operators found more porous lime at 8,316-27 feet, recovering 3 feet and 4 inches of medium porous, slightly oolitic, lime with no show of oil and a slightly salty taste. The test was drilled to 8,332 feet and an electrical log was run to 8,312 feet At last report the crew was arranging to set 7inch casing, apparently on bottom.

This wildcat is in the Emerson area, about seven miles southeast of the Magnolia or Kerr-Lynn field of Columbia County. Considerable interest has been evinced in it since it began drilling, and the show of saturation is augmenting leasing activity in the surrounding sections.

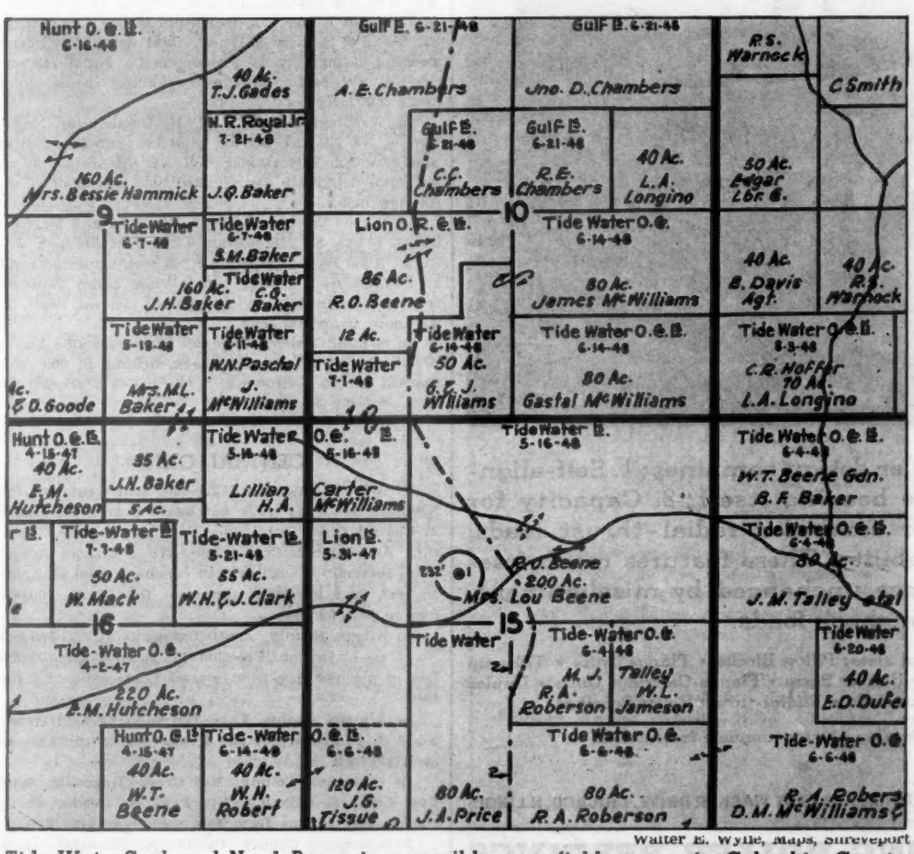
The second wildcat to show production during the week in South Arkansas is the Fohs Oil Co. No. 1 Craig, C SE NE Section 5-18-14, southeast of the city of El Dorado. No. 1 Craig topped the Buckner formation at 6,750 feet, and cored the Smackover lime with a show of oil at 6,849-56 feet. A drill stem test taken at 6,848-56 feet, using one-fourth inch choke both top and bottom, showed a recovery of 350 feet of blackish 31-gravity oil, and 4,600 feet of salt water and mud in 14 minutes. The maximum working pressure of 25½ pounds was reached at the end of eight minutes. Operators were circulating on bottom, at latest reports, after taking another core, and an electrical survey will be run.

The Fohs well showed the following recoveries in coring the section: At 6,856-73 feet, 13 feet 3 inches total recovery, consisting of 7 feet 7 inches of firm porous saturated oolitic lime; 3 feet 4 inches of fine slightly medium porous oolitic lime, no oil showing, and possibly carrying salt water, although showing no salty taste, and 2 feet 4 inches of slightly porous oolitic lime.

The results of these two strikes cannot yet be predicted, and opinion varies on the probability of their representing discovery wells of two more lime fields. They have greatly increased current interest in the South Arkansas area, however, and their possible pays, corresponding to the producing formations in Schuler, Buckner, Magnolia and Village, all comparatively recent South Arkansas fields, support the expectation that other Smackover lime production may be discovered in the trend extending through Columbia and Union counties.

The Village field of Columbia County gained a good oil well, as the Standard Oil Co. of Louisiana No. 1 E. D. Harris, was turned into tanks making an initial production of 223 bbls. in 21 hours through a 5/32-inch choke. The fluid consisted of 3 per cent of basic sediment. Casing pressure was 2,650 pounds and tubing pressure 2,100 pounds. The well has a very low gas-oil ratio.

In the Buckner field of northwest Columbia County, Standard is nearing completion on another oil well, No. 4 McKean. A string of 6-inch casing was set at 7,212 feet and tubing was run, and the plug drilled for completion sometime over the week-end.


Hunt O. & G. 6-16-48
40 Ac. T. J. Gades
A. E. Chambers
Gulf E. 6-21-48
Jno. D. Chambers
R. S. Warnock
C. Smith
N. R. Royal Jr. 7-21-48
Gulf E. 6-21-48
C. F. Chambers
Gulf E. 6-21-48
R. E. Chambers
40 Ac. L. A. Longino
50 Ac. Edgar Lbr. Co.
160 Ac. Mrs. Bessie Hammick
J. Q. Baker
9
10
Tide Water 6-1-48
Tide Water 6-1-48
S. M. Baker
Lion O. & G. Co.
Tide Water O. & G. 6-14-48
40 Ac. B. Davis Agt.
40 Ac. R. S. Warnock
Tide Water 6-1-48
160 Ac. J. H. Baker
C. O. Baker
86 Ac. R. O. Beene
80 Ac. James McWilliams
Tide Water 5-19-48
Tide Water 6-11-48
N. N. Pascal
12 Ac.
Tide Water 6-14-48
50 Ac. G. F. J. Williams
Tide Water O. & G. 6-14-48
80 Ac. Gastal McWilliams
Tide Water O. & G. 8-3-48
C. R. Hoffer 70 Ac. L. A. Longino
Ac. C. O. Goode
Mrs. ML. Baker
J. McWilliams
Tide Water 7-1-48
10
Hunt O. & G. 4-15-47
40 Ac. E. M. Hutcheson
35 Ac. J. H. Baker
5 Ac.
Tide Water 5-16-48
Lillian H. A.
O. & G. 5-16-48
Carter McWilliams
Tide Water E. 5-16-48
Tide Water O. & G. 6-4-48
W. T. Beene Gdn. B. F. Baker
Tide-Water E. 7-1-48
50 Ac. W. Mack
Tide-Water E. 5-21-48
55 Ac. W. H. & J. Clark
Lion E. 5-31-47
232' #1
R. O. Beene 200 Ac. Mrs. Lou Beene
Tide Water O. & G. 6-4-48
J. M. Talley etal
16
15
Tide-Water O. & G. 4-2-47
220 Ac. E. M. Hutcheson
Tide Water
Tide-Water O. & G. 6-4-48
M. J. Talley R. A. Roberson
W. L. Jameson
Tide Water 6-20-48
40 Ac. E. D. Dufe
Hunt O. & G. 4-15-47
40 Ac. W. T. Beene
Tide-Water 6-14-48
40 Ac. W. H. Robert
O. & G. 6-6-48
120 Ac. J. G. Tissue
80 Ac. J. A. Price
Tide Water O. & G. 6-6-48
80 Ac. R. A. Roberson
Tide-Water O. & G. 6-6-48
R. A. Roberson D. M. McWilliams

Walter E. Wylie, Maps, Shreveport

Tide Water-Seaboard No. 1 Beene is a possible new field opener in Columbia County, South Arkansas, having cored saturated porous lime in the Smackover lime horizon, already producing in five other South Arkansas fields

Production by Pool

Estimated daily gross production all companies week ending December 9, 1938:

NORTH LOUISIANA

	Barrels
Bellevue	645
Caddo light	4,125
Caddo heavy	2,620
Converse	545
Cotton Valley heavy	95
Cotton Valley light	9,595*
Cross Lake	1,200
De Soto and Red River	1,240
Elm Grove	300
Haynesville	2,975
Holly	90
Homer	2,650
Lisbon	10,275
Pleasant Hill	105
Rodessa	30,385
Sarepta-Carterville	385†
Sligo	1,900
Sugar Creek	295
Urania	2,915
Zwolle	3,650
	75,990

SOUTH ARKANSAS

Buckner	1,365
Champagnolle	1,700
El Dorado	1,775
Lisbon	260
Miller County	355
Nevada	630
Rodessa	4,575
Schuler	17,525
Smackover light	2,000
Smackover heavy	15,480
Stephens	540
Troy	950
Urbana	1,125
Village	1,350
	49,630

Texas side of Rodessa field 30,255 bbls. daily.

*4,735 bbls. is distillate.
†100 bbls. is distillate.

Old Fields Awaken

The new flush producing fields of Buckner, Schuler, Village and Magnolia in South Arkansas are not the only objects of drilling activity, as the Smackover and Champagnolle fields of Union County are seeing some development. A number of rigs are active in those fields, particularly the latter, finding new production in the same formations which have been producing for many years.

The Miller County extension of Rodessa is seeing an upturn in drilling activity, with four drilling operations under way. One, the F. W. Martin Drilling Co. No. 3 Watts, is an outpost test, located a quarter of a mile northeast of the same operator's No. 1 Watts, a north extension recently added to the field.

Lafayette County will continue to be watched, as

the new wildcat in the Stamps area, Shell Petroleum Corp. and Ohio Oil Co. No. 1 Warren approaches critical depth. The wildcat is now drilling below 2,310 feet.

Cotton Valley

A flattening of the Lower Marine and the Bodcaw sand on the northeast side of the Cotton Valley field is evident from the record of the Hunt Oil Co. No. 10 Davis, which cored the Bodcaw sand at 8,288-8,333 feet. The test has the Bodcaw approximately 60 feet higher than is expected from the contours of the Bodcaw based in previously drilled wells. The No. 10 Davis, a northeast outpost, is running 7-inch casing with total depth at 8,392 feet, for an early completion.

On the southwest edge of the field, the same operator's No. 1 Sandifer, which has shown salt water in the lower Marine, is perforating in the "D" sand where a show of oil was found.

The Driscoll area of Bienville Parish has a new gas-distillate well in Arkansas-Louisiana Gas Co. No. 1-B Davis Lumber Co., which came in making 22,879,000 feet of gas with a rock pressure of 2,010 pounds. The test made salt water on two previous perforations, and is producing through perforations at 5,860-80 feet. Old total depth is 7,201 feet.

Joaquin Oiler

The Redditt and Gray No. 2 Pickering Lumber Co. in the Henry Survey, Joaquin gas-distillate field, is producing 72 bbls. of oil daily with about 7,000,000 feet of gas, for the first oil well in the area. Considerable interest is shown in leasing in the general area.

Shreveport Field

With several drilling operations under way in the Shreveport field, important outpost tests will be watched in the near future as they approach the Pettit lime. The southwest outpost test, C. D. Loe's No. 1 Meyer, across Cross Lake from the original Allison producer, is still awaiting orders at 5,598 feet, having tested salt water at 5,589-92 feet with packer set at 5,587 and 5,600 feet. The test showed oil previously, and it is believed that the water can be shut off and the well brought in for an important extension.

Southeast of the city of Shreveport, in the Lucas area, the Arkansas Louisiana Gas Co. abandoned the No. 1 Webb at a total depth of 6,010 feet, getting no shows of oil or gas in the Pettit, topped at 5,616 feet.

Total Rodessa crude oil runs down to the end of November reached 80,248,585 bbls., of which 50,617,789 bbls. was produced in the Louisiana section, 23,376,090 bbls. in Cass County, Texas, 2,922,475 bbls. in Marion County, Texas, and 3,332,231 bbls. in Miller County, Arkansas.

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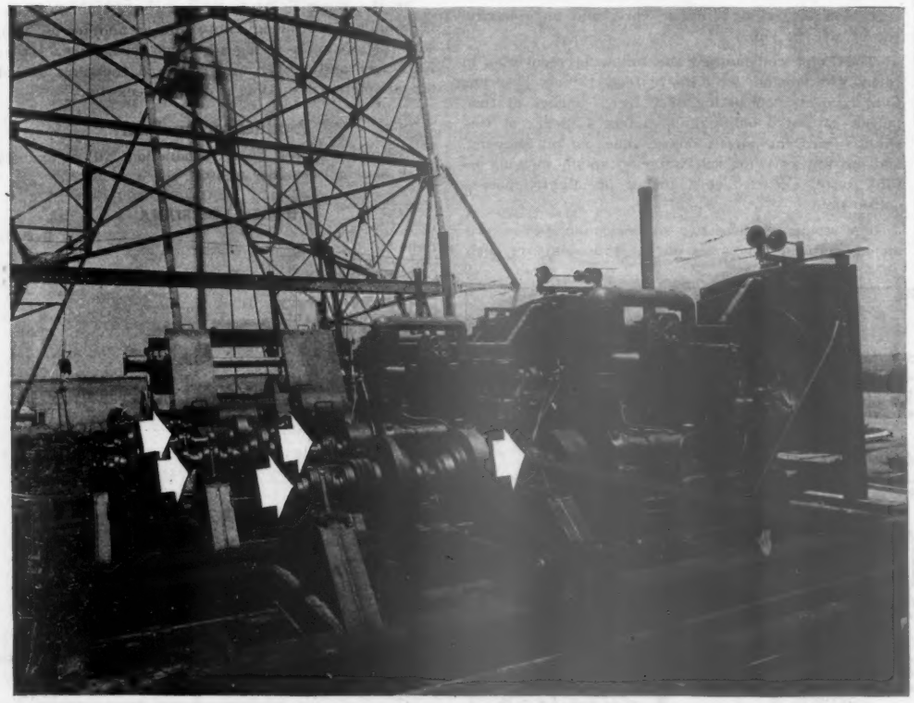

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Illinois Fields

(Continued from Page 64)

NE SE Section 11-7s-2w, was drilling at 1,895 feet, in the Chester series.

In Johnson County, Cato Elzie No. 1 Bonner, C SW NE Section 30-11s-3e, drilling at 650 feet.

In Macoupin County, W. G. Dillon and others No. 1 Keele, SE SE NE Section 32-10n-9w, drilling at 560 feet in a hole full of water.

In Madison County, Harry Hazlett No. 1 Wetzell, SW SW SE Section 12-5n-6w, total depth 1,220 feet, fishing.

In Marion County, Robert Garland No. 1 Voght, SE SE NE Section 16-3n-2e, shut down at 1,720 feet. J. Q. Gill No. 1 J. A. Brown, SW SW SW Section 5-3n-3e, drilling at 550 feet. Ed L. Hohmans No. 1 Shafelt School, 941 feet from south and 115 feet from east lines of SE quarter Section 8-2n-2e, topped Fredonia lime at 2,246 feet and shut down for orders at 2,294 feet.

In Montgomery County, Soliday and Sams No. 1 Moon, NE cor. SW Section 11-7n-3e, shut down at 1,065 feet.

In Randolph County, Ames Drilling Co. No. 1 Nicholson, SW NW NW Section 12-5s-9w, drilling at 1,820 feet.

In Perry County, Bert Freeds and Rockhill No. 1 Provert, SW SE SE Section 27-5s-1w, drilling at 1,505 feet.

In Sangamon County, Morris and others No. 1 King, NW NE SE Section 24-15n-7w, had Trenton lime top at 1,797 feet, and was at a total depth of 1,850 feet. Five-inch casing was set at 1,796 feet, and the crew was rigging up standard tools.

In Shelby County, Frank Frederick and others No. 1 Fluge, near C N half NE NW Section 34-10n-5e, was drilling at 600 feet; Swords & McDougal No. 1 Darst, NW NW NW Section 17-11s-2e, drilling at 1,143 feet; Independent Refiners & Producers No. 1 Hackenburg, SE SW SW Section 20-12n-2e, total depth 1,295 feet, swaging casing; Prunty Production Co. No. 1 Hickey, SE SW SW Section 34-12n-4e, running casing, total depth 2,002 feet.

In Washington County, G. H. Blankenship No. 1 Dennis, NE NW NE Section 14-3s-3w, spudding; Jett & Skidmore No. 1 Hoelscher, SW NE SE Section 25-2s-5w, total depth 610 feet; junked hole and skidded rig for new hole.

In Wayne County, Roche & Broyles No. 1 McPherson, C S half SE NE Section 4-2s-7e, set 5½-inch casing at 3,253 feet, total depth 3,269 feet, saturated sand at 3,253-65 feet, drilling plug. While being swabbed the hole began to flow and partly cleaned itself. It was shut in for tankage.

In White County, Pyramid Petroleum Co. No. 1 Wade, SE SE NE Section 4-7s-8e, drilling at 900 feet. Sun Oil Co. No. 1 Brown, C N half SW NW Section 12-4s-9e, drilling at 3,745 feet.

CENTRAL OHIO

FINDLAY, Ohio, Dec. 12.—The acid treatment for Newburg sand gas wells has again proven successful in Central Ohio. In Wayne County, Congress Township, Alexander McCrea treated No. 1 Charles Ackerman, Section 13, with acid in Newburg sand at 2,800-38 feet, and increased the open flow from 100,000 feet to 950,000 feet.

In Athens County, Ames Township, D. T. Orndoff No. 2 G. L. Bryson, Fraction 17, is good for 100,000 feet of gas per day from second Berea sand at 1,404 feet.

In Ashland County, Lake Township, G. L. Harmon No. 1 J. J. Frank, Section 2, was dry in the Clinton at 3,112 feet.

In Coshocton County, Mill Creek Township, Ohio Gas, Light & Coke Co. No. 2 F. M. Bender, made 100,000 feet of gas from Berea sand at 946 feet.

In Guernsey County, Cambridge Township, Cambridge Glass Co. No. 1 M. E. Burk, Lot 11, had a daily production of 100,000 feet of gas from Berea sand at 1,025 feet. In Washington Township, Jones

& Jewell No. 3 W. M. Davidson, Section 8, was dry at 1,420 feet.

In Licking County, Eden Township, C. A. Davis No. 1 Russell Woodruff, Section 5, had an open flow of 370,000 feet of gas from the lime at 2,148 feet. In Fallsbury Township, Blue Rock Oil Co. No. 6 Thomas Moran, Section 7, made 80 bbls. of oil the first 24 hours after a shot in Clinton sand at 3,037-69 feet.

In Lorain County, Carlisle Township, Ohio Fuel Gas Co. No. 2 C. A. Campbell, Section 21, produced an initial of 500,000 feet of gas from the Clinton at 2,206-11 feet.

In Medina County, Chatham Township, Edson & Son No. 31 D. S. Ross, Lot 7, made 6 bbls. of oil the first 24 hours after shot in the Berea at 316-411 feet.

In Meigs County, Salisbury Township, T. J. Marshall and others No. 3 Martha Hysell, Section 33, made 700,000 feet of gas from both the Salt sand and the Maxon sand, total depth 1,055 feet.

In Stark County, Lake Township, White Producers No. 1 G. W. Wingard, Section 35, was dry in the Clinton at 4,762 feet.

In Summit County, Green Township, East Ohio Gas Co. No. 1 Joseph Brum, Section 33, had 500,000 feet of gas per day from Clinton at 4,231-56 feet.

In Washington County, Barlow Township, Campbell and others No. 1 W. F. Liebrand, Section 4, made 150,000 feet of gas from the Stray sand, total depth 1,203 feet. In Newport Township, G. A. Pickens No. 21 Alvin Adkins, Section 27, is a 1-bbl. pumper from shale at 1,780-90 feet.

Lima Field

In Seneca County, Clinton Township, Sun Oil Co. No. 1 Jacob Zeis, Section 7, previously reported as a dry hole in the Green sand, has been filled back and made into a small Trenton sand gas well.

In Hancock County, Washington Township, Travelers Oil Co. No. 1 Jacob McCullough is setting 5½-inch casing on top of the Green sand at 1,915 feet, preparatory to drilling in.

Kentucky Fields

(Continued from Page 64)

Wells land, in the same vicinity. Columbian Fuel was drilling at 2,340 feet in No. GW-827 Big Sandy Coal & Clay Co., Tract No. 1, on Little Paint Creek.

The Kentucky West Virginia Gas Co. was below 1,585 feet, in shells, in No. 578 Sherwood Osborn, on Toms Creek. The same firm was drilling at 865 feet, in sand, in No. 5249, Alie Ward land, on Levisa Fork.

In Martin County, Kentucky West Virginia Gas Co. was at 1,580 feet, in Big lime, in No. 574, John and Benjamin Sellards land, on Coldwater Fork, and is cleaning out No. 5235, C. W. Preece land, nearby. Warfield Natural Gas Co. was down 600 feet in No. 4778, Sam Webb farm, on Rockhouse Fork. Virginian Gas & Oil Co., made a location for No. V-1269 Federal Gas & Oil Co., on Peg Fork of Coldwater Fork, and has a location for No. V-1270 N. J. Cassidy No. 3, on Little Crooked.

In Knott County, Mid City Gas Co. was drilling at 655 feet in No. 2 R. H. Fields, on Parks Branch. The Inland Gas Corp. is down 2,156 feet, in Big lime, in No. 203, Curtis Pigman land, on Right Fork of Troublesome Creek, and at 1,283 feet, in lime, in No. 204, Virginia-Kentucky Gas Co. lease, in the same vicinity. The same corporation is drilling at 2,351 feet, in Big lime, in No. 205, Kentucky-West Virginia Gas Co. land, on Trace Fork of Troublesome Creek.

In Pike County, Columbian Fuel was drilling at 1,359 feet in GW-828 John Smith No. 3, on Meathouse Branch. The same company is down 1,135 feet in No. GW-830, Tierney Land Co. No. 11, at Pigeon Roost. Columbian Fuel had reached 549 feet in No. GW-831, Tierney Land Co. No. 12, on Coburn Branch, and is down 657 feet in No. GW-829, Georgia A. Johns No. 1, also on Coburn Branch. The Bent Mountain Oil & Gas Co. is shut down at 2,223 feet in No. 1, Varney & Deskins Heirs land, on Bevins Branch.

In Wolfe County, James I. Hollon reports a total depth of 3,807 feet in No. 1 D. H. Rose, on Red River. The same operator has a location for No. 2 on the same farm.

In Magoffin County, the Wheelersburg district, Browning Brothers have rig up for an air well on the C. C. Meade farm.

In Powell County, Monroe Faulkner is down 700 feet in No. 1 A. C. Sparks, at Pilot. Perry and others have reached the 800-foot level in No. 1, Ova Sparks land, nearby. Hall & Ogle are down 600 feet in No. 1 High Reed, also at Pilot.

In Lee County, the Hall company is down 900 feet in No. 1, Crit Childers land, in the Hell Creek district. Doctor Leman and others are rigging up at No. 1 W. B. Bush in the same locality.

Eastern Fields

(Continued from Page 78)

Medina 5,385 feet to present depth. This is the first test that deep on this structure.

In Pleasant County, Columbian Carbon Co. had reached 4,608 feet in the test on the Giles Hammat farm in Grant district. In Jackson County, Godfrey L. Cabot, Inc. is drilling at 1,910 feet on the Walker & Jones lease. In Ravenswood district, another deep hole will be announced in the near future.

New Work

In Calhoun County, Everett Starcher and others have started drilling on the Clay Starcher farm in Lee district, and has reached 850 feet in the second test on the Anna Slider farm. In Sherman district, Richards & Connolly are down 850 feet on the Amos Sturm farm.

In Gilmer County, J. A. Tierney is building a rig on the G. Hart farm, DeKalb district. L. E. and W. H. Mossor have started drilling on the C. L. Riddle farm and are building rig for the S. S. Riddle test. McKnight & Vannoy are rigging up on the A. B. and J. D. Vannoy farm.

In Mingo County, W. F. Burchett made a location on the B. F. Meade farm on Marrowbone Creek in Kermit district. E. L. Lusher is drilling at 1,825 feet in No. 2 Noah A. Steep. In Lincoln County, R. H. Adkins made a location on the T. C. Collins farm in Carroll district, elevation 885 feet.

In Ritchie County, W. R. Hays will drill No. 4 fee in Murphy district, elevation 984 feet. In Wirt County, W. C. Patterson has locations for No. 24 elevation 1,090 feet; No. 25 elevation 1,097 feet; No. 26 elevation 1,015 feet; No. 27 elevation 975 feet on the Robinson Petroleum tract in Clay district. In Wetzel County, Null & Moorehead will drill on the Jackson Hostutler heirs in Church district, elevation 1,282 feet.

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Michigan Field Report

By
O. C. PRESSPRICH

Dry Holes Exceeded New Oil Wells in Week's Field Work

SAGINAW, Mich., Dec. 12.—New production declined materially in all Michigan petroleum fields during the past week as full effects were felt of cautious development prompted by the fear of low crude prices. For the first time in months the number of completed producers fell below the number of dry holes, mainly due to exploration of extensive wildcat acreage near proved fields. There were nine new oil wells and two semi-completions in six of the state's major fields during the week, and 10 dry holes, mostly in wildcat or semi-wildcat territory.

Three townships in the Allegan County field contributed one new oil well each, and Van Buren County's Bloomingdale pool, which dominated new production in Michigan for several weeks, added only two wells. Clare County's Redding pool added the only completion of the week in that region, though two semi-completions were reported in the Freeman area. Gladwin County is represented in the week's new production with one completion in Buckeye. Midland County's dormant Edenville pool added one completion, rated as among the best recent additions in the sector.

Extensive wildcatting—mostly extension attempts near favorable pools—contributed to the week's heavy list of dry holes. Huron County, in the Thumb district, recorded a dry hole in Vernon Township, adding another failure to the 10-year attempt to tap the supposed vein, which geologists claim is on the same trend as the Petrolia, Ont., production. Isabella County's Nottawa field, once a promising sector, recorded a failure, and dry holes also were reported in the new wildcat territory of Ogemaw County's Edwards Township and Ottawa County's Holland Township. Wildcatting in surrounding townships near Bloomingdale's prolific field also resulted in failures.

Allegan County

Dorr Township (4n-12w)—Columbia Oil & Gas Co. No. 7 Richter, SW NW SE Section 30, came in as a 200-bbl. acidized well. It was the only new producer in Dorr.

Heath Township (3n-14w)—Development of the area immediately south of the Overisel discovery pool continued with the addition of Lima Oil Corp. No. 5 Gates, SE NW SW Section 1, rated at 100 bbls. daily after acid.

Overisel Township (4n-14w)—Wildcat extension of the Overisel "21" pool, about two miles northwest, failed at Hugh H. Heinig's No. 1 Fokkert, SE NW SE Section 7. The test ran into water shortly after entering the pay zone. It was abandoned.

Salem Township (4n-13w)—One producer was added to the old section of Salem's development, Salem Oil & Gas Co. No. 3 George, SE NW SW Section 21. It gauged 100 bbls. daily after treatment.

Barry County

Yankee Springs Township (3n-10w)—Yankee Springs Development Co. No. 1 Royes, NE NW NW Section 14, failed in an attempt to prove commercial production, and was abandoned.

Clare County

Freeman Township (18n-6w)—Two semi-completions which showed favorable early logs were indicated in Freeman. Freeman Oil Co. No. 1 Christensen, NE NE SE Section 3, an east offset to Pure Oil Co. prolific No. 1 Van Horn completion, logged 2,500 feet of oil in the hole. Charles W. Teater No. 1 Van Horn, SW SW NE Section 3, logged about 800 feet of oil and was being completed.

Redding Township (19n-6w)—The only listed completion in the Clare field last week was Daily Crude Oil Co. No. 4 Van Horn, NW SW SW Section 34, rated at 500 bbls. daily natural. It is in proved territory.

Gladwin County

Buckeye Township (18n-1w)—Midway pool development added one producer last week at Rex Oil & Gas Co. No. 4 Woodring, NE SW SE Section 23, rated at 100 bbls. daily after acid.

Huron County

Verona Township (16n-13e).—An attempt to log commercial oil production in the Thumb district failed at Charles Teater No. 1 Kerr, NW NW NW Section 27, east of Bad Axe. The test will be abandoned.

Isabella County

Nottawa Township (15n-5w)—A dry hole was logged at Gulf Refining Co. No. 1 Hauck, SW NW SW Section 13.

Sherman Township (15n-6w)—A 600-bbl. natural producer was gauged at Pure-Shell's No. A-3 Doyle, NE NE SE Section 32, the first Sherman producer added in several weeks.

Ogemaw County

Edwards Township (21n-1e)—Wildcat probing of the area at Rowmor Corp. No. 1 McBain, NE NE NE Section 27, failed with a dry hole recorded.

Midland County

Edenville Township (16n-1w)—One of the best recent additions to the dormant Edenville pool came in the past week at Pure Oil Co. No. A-2 Pure-Shell-State, SE NE SW Section 27. It gauged 350 bbls. daily after acid. There have been few recent completions in the area.

Ottawa County

Holland Township (5n-15w)—Two wildcat failures were recorded here this week. McClanahan Oil Co. No 2 Kooyers, SW SW NW Section 2, failed to produce, and F. W. Kehlet No. 1 Dunton, NE SW SE Section 19, also was dry.

Van Buren County

Bangor Township (2s-16w)—Probing for another pay vein one township south and two townships west of the prolific Bloomingdale pool failed last week at Whitehill & Drury's No. 1 Webster, S NE SW Section 35. The hole was abandoned.

Bloomingdale Township (1s-14w)—Two favorable natural producers were brought in last week, although a marked decline in new development was apparent in the Bloomingdale area, which has dominated the state's new production for several weeks. J. V. Wicklund Co. No. 1 Burnette, SW SW NW Section 16, rated as a 40-bbl. producer, and J. B. Reid's No. 2 Hobat, NE SE NE Section 17, gauged 900 bbls. in a brief open run.

Columbia Township (1s-15w)—Possible extension of the Bloomingdale pool into Columbia Township appeared checked with a failure at H. C. Nelson No. 1 Juny, SW SE SW Section 18. Columbia Township adjoins Bloomingdale on the west.

Keeler Township—Mesel & Spielberg No. 1 Conkling, SW SE SW Section 26, failed to log commercial production and was abandoned.

N. Y.-Penna. Gas Fields

COUDERSPORT, Pa., Dec. 12.—The completion of one well, a dry hole, and the staking of two new locations featured developments of the past week in the Oriskany sand gas fields of northern Pennsylvania and southwestern New York. G. L. Cabot, Inc., completed the dry hole on the Emma Elliott farm in Harrison Township, Potter County. This well was drilled through the Oriskany at 5,104-33 feet to a depth of 5,153 feet. Neither gas nor water was found in the sand.

One of the new locations was staked by Penn York on the Lena Barnes farm in Harrison Township, Potter County, Pennsylvania, and the other by Hanley & Bird on the G. H. Rice farm in Woodhull Township, Steuben County, New York.

Five of the current New York operations were scheduled for completion within a few days after release of the latest scout report. All five were deep in the Onondaga limestone, caprock for the Oriskany sand. These wells are:

G. L. Cabot, Inc., on the Charles Crane No. 1 in Woodhull Township, Steuben County. This well topped the Onondaga limestone at 3,705 feet and the Oriskany at 3,741 feet. It was drilled to a depth of 3,760 feet and cased before shooting.

(Continued on Page 119)

Rocky Mountain Fields

(Continued from Page 88)

nental Oil Co. The location for the first of these was released last week in the Continental No. 7-B Schuricht in Section 6. The Ohio company will drill in Section 32 in its No. 5 Rohiff, and the Argo company will drill on the Elliott lease in Section 5 in its No. 9. The Continental Oil Co. also released a location for a Leo sand well in its No. 3 Apex-4 in Section 35 for the account of the Buck Creek Oil Co. This will be a diagonal offset on the northwest to the Ohio No. 6 Leo.

The Continental Oil Co. No. 2-B Dielman, a west offset to the Minnelusa Oil Co. No. 1 H. & M.-3, which was scheduled for completion this week, has been delayed by a series of accidents. It cored saturated sand and lime to 5,549 feet and then set the 7-inch at 5,472 feet. While drilling the plug the drill pipe became stuck. Then in attempting to recover the drill pipe a fire damaged the machinery and the string fell to the bottom. The extent of the damage has not yet been determined.

Ohio Oil Co. No. 5 Rohiff, 100 ft. E of C E½ Sec. 32-36n-65w. Loc.; (first report).
Continental Oil Co. No. 3 Apex-4, SE SW NW Sec. 35-36n-65w. Loc.; (first report).
Argo Oil Co. No. 9 Elliott, NW NW SE Sec. 5-35n-65w. Loc.; (first report).
Ohio Oil Co. No. 6 Leo O.P.C.-16, NW NE SW Sec. 35-36n-65w. B.R.
Continental Oil Co. Acct. Buck Creek Oil Co. No. 7-B Schuricht, NE SW SE Sec. 6-35n-65w. R.U.R.
F. F. Hintze et al No. 1 Wright-Govt., NW NW SE Sec. 30-36n-63w. R.U.R.
Fall River Roy. & Prod. Co. No. 10-B Govt., CNL SE SE Sec. 35-40n-61w. Spdg. 60 ft.
Ohio Oil Co. No. 1 Jones, SE NE SE Sec. 30-35n-62w. Drlg. barren L. 2,605 ft.; top Bell sd. 2,493 ft.; showed wtr.
J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Loc.
Cow Gulch Oil Co. No. 1 MaGoon, NE NE Sec. 33-35n-64w. Drlg. 815 ft.
Ohio Oil Co. No. 6 Cash, O.P.C.-2, NW NW NE Sec. 1-35n-65w. T.D. 5,421 ft.; 7-in. csg. 5,369 ft.; swbd. 79 bbls. in 24 hrs.; acd. 500 and 3,000 gal.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 1,796 ft.
H. D. Moore et al No. 1 Bergrem, NW Sec. 23-35n-63w. T.D. 1,769 ft. in Minnelusa; S.O.; rng. pkr. to S.O.W. and test.
Adams O. & G. Co. No. 1 Baker, NW NE SW Sec. 8-35n-65w. Drlg. 4,650 ft.; top r.b. 4,405 (?) ft.

Continental Oil Co. No. 2-B Dielman, NE NW NE Sec. 8-35n-65w. T.D. 5,549 ft.; cond. hole.

Park County

E. J. Preston is moving in rotary for a test on the west side of the Frannie field one-fourth of a mile out from the nearest producer.

E. J. Preston No. 1, SW SW Sec. 26-58n-98w. M.I.M.; (first report).
Blue Ridge Oil Co. No. 1 Mau, NE NE SW Sec. 25-58n-98w. Cmtd. 12½-in. 100 ft.; drlg. plug.
Stanolind O. & G. Co. No. 18 Elk-5, NW NE NW Sec. 30-58n-99w. Cg. 1,609 ft.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. S.D. 8,690 ft.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. S.D. 550 ft.

Sublette County

Texas Co.-Frontier Pet. Co. No. 1 Unit, SE SE SW Sec. 1-28n-114w. T.D. 6,247 ft.; crater cmtd. off.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd rnh., SE SE Sec. 31-13n-112w, S.D. 10 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.

Sweetwater County

The Sinclair-Wyoming Oil Co. had a good completion in its No. 80, NE cor. Section 11-26n-90w, in the Lost Soldier field in the Sundance at 2,012 feet, total depth. Top was at 1,923 feet. It flowed 400 bbls. in an 8½-hour test and then 381 bbls. in 13 hours. Then it made 889 bbls. in 24 hours. It is being produced with gas lift.

Sinclair-Wyo. Oil Co. No. 81, SW NW NW Sec. 11-26n-90w. Drlg. 810 ft.

Uinta County

Stove Creek Oil Co. No. 3 Govt., CWL SW NW Sec. 26-14n-119w. Drlg. 50 ft.
Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. Drlg. 1,700 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 350 ft.

Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. T.D. 1,700 ft.; drlg. plug.; wtr. in first Frontier 1,205-23 ft.
Frison Oil Co. No. 2 Govt., SE SW NE Sec. 24-47n-90w. S.D. 145 ft.

Weston County

Krokar et al No. 1, SE SE NW Sec. 31-47n-63w. Drlg. 200 ft.
James Farrel No. 1 Govt., NE SE SE Sec. 2-44n-61w. Drlg. 74 ft.
Lem Johnston No. 1, C SE SW Sec. 31-44n-62w. Loc.
Selby & Langford No. 1, CNL NW SE Sec. 6-46n-63w. Drlg. 100 ft.
Whedon et al No. 1, Sec. 21-46n-64w. Drlg. below 300 ft.
F. R. Dilger, Tr., No. 16, SW SW NE Sec. 30-46n-63w. T.D. 1,402 ft.; recmtd. csg.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Borophy No. 1 George, SW SE NW Sec. 26-48n-64w. Drlg. 2,240 ft.

MONTANA

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Blaine County

G. R. Teeters No. 1 Stam, CSL SW SE Sec. 10-31n-18e. (Formerly R. E. O'Keefe). S.D. 860 ft. for csg.; top Eagle 630 ft.

Carbon County

Valentine M. Kirk et al No. 1 Robinson, SW SW NW Sec. 2-7s-21e. R.U.R.
Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. T.D. 1,580 ft.; rng. 6¾-in.; O.W.D.D.; (formerly East Bridger Oil Co.).
R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. Drlg. 2,850 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
Sha-Wha Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res.; will U.R. to bttm. and set csg.

Cascade County

E. B. M. Oil Co. No. 1 Betts, CSL NW SE Sec. 34-18n-4e. T.D. 1,250 ft.; prep. to res.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. S.D. 1,991 ft.; S.D. for 6⅝-in.; Sunburst 1,935-53 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,065 ft.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. Drlg. 1,928 ft.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 25-6n-60e. Drlg. 320 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,080 ft. (C.D.); in lower Quadrant.
Emmons et al No. 5 Stocker, SW NW SW Sec. 24-22n-18e. Drlg. 950 ft.

Glacier County

An important discovery was made in the Yukon Oil Co. No. 1 Lungren, SE cor. SW Section 23-37n-5w, in the North Cut Bank area, 4½ miles north of the nearest gas well in the Cut Bank field proper and 7 miles from the nearest producing oil well. It had a

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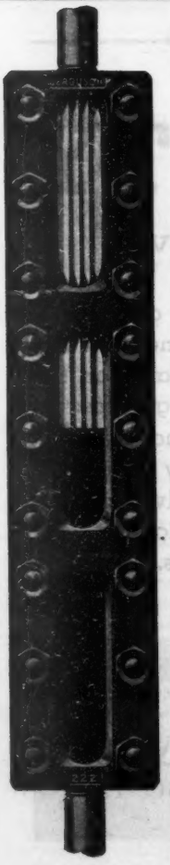

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good show of oil at 2,724-25 feet and cemented the 7-inch at 2,527 feet. It then went into green sandy shale at 2,725-45 feet with oil sand at 2,745-60 feet, last depth also being the total depth. It swabbed 75 bbls. the first five hours and then was shut in.

The production is reported coming from the Moulton sand which lies above the Sunburst, and the latter, in turn, is above the Cut Bank sand, which is the oil-producing horizon in the field proper. No production has heretofore been found in the Moulton sand in Cut Bank, but some gas has been encountered in that horizon to the north and east. The Moulton is not present in Kevin-Sunburst. There are two dry holes in Sections 15 and 23-36n-5w which may indicate that the area to the north is a new pool instead of an extension.

In the summer of 1933, the Santa Rita Oil & Gas Co. and P. T. Sweeney drilled their No. 1 Jacobson, C NW NW Section 23-37n-5w, a wildcat which went to 2,633 feet. It had some gas and oil and water. It plugged back to 2,628 feet and on a pumping test made 60 bbls. of oil with some water in 20 hours. This apparently marks the northern limits of the area as the Yukon Oil Co. then drilled a north offset which was not much of a well and was abandoned.

In 1937 A. B. Cobb went 3 miles to the southeast of the Jacobson well and drilled in a gasser in the top of the Moulton sand which made 8,300,000 feet at 2,585-92 feet. It was then shut in until the past spring when it was deepened to 2,605 feet where it gauged 40,000,000 feet from the basal Moulton sand. It was believed not to be deep enough to reach the Sunburst.

The Yukon No. 1 Lungren is three-fourths of a mile south and east of No. 1 Jacobson and nearly 3 miles west and a little north of the Cobb gasser. The nearest gas well in the field proper is the Glacier Production Co. No. 1 McNamar unit, SE NE Section 5-36n-5w, which was completed for 17,000,000 feet. The horizon was not definitely identified at the time, but was either the Moulton or Sunburst sands.

There was one completion in Cut Bank in the Texas Co. No. 3 Curran, NE cor. NW Section 8-32n-5w, which swabbed 40 bbls., mostly water, the first 24 hours at 3,000 feet from sand at 2,965-70 feet. A squeeze job is being run in an attempt to shut off the water.

Two new locations were released.

Glacier Prod. Co. No. 4 State, 2,200 ft. from N line and 1,320 ft. from W line, Sec. 16-33n-5w. R.O.G.; (first report).
K. D. Pardee No. 3 Tribal-179, NW NE SE Sec. 12-32n-6w. Spdg.; (first report).
Yukon Oil Co. No. 1 Lungren, SE SE SW Sec. 23-37n-5w. T.D. 2,760 ft.; S.I.
Consolidated Gas Co. No. 1 Tribal, NW NE NW Sec. 18-32n-5w. Drlg. Cut Bank sd. 2,926-42 ft.; 2,500 ft. O.I.H.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec 16-35n-6w. Loc.

Judith Basin County

Fletcher E. Hunt No. 1 Hoven, SE NE NW Sec. 30-14n-15e. Spd. and S.D.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

H. Clark Rowland No. 1 Brundidge-Mink, SE NW Sec. 35-14n-25e. Skdg. rig from No. 1 Kallspel.
Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 800 ft.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Richland County

W. M. Fulton No. 1 Richardson, SW SW SE Sec. 29-26n-52e. Drlg. 540 ft.; small S.W. at 435 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. Drlg. 1,330 ft.
Gulf States Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. S.D. 2,525 ft. until spring.

Toole County

There were three new operations and no completions in Kevin-Sunburst.

Neptune O. & G. Co. No. 7 Seabrook, NW NW SW Sec. 19-35n-2w. Spdg. 130 ft.; (first report).
Superior Pet. Co. No. 4 Goeddertz, CEL SE SW Sec. 12-35n-3w. Spdg. 60 ft.; (first report).
Big West Oil Co. No. 3 Engle, CEL SW SW Sec. 1-35n-3w. Drlg. 450 ft.; (first report).
Henry Vander Pas No. 2 Thompson, NW cor. Sec. 32-35n-3w. Drlg. 620 ft.
Mosby Oil Co. No. 1 Pederson, C NE SW Sec. 7-35n-2w. Drlg. 420 ft.
Kluth et al No. 2 Gunderson, SW cor. Sec. 18-35n-2w. Drlg. 460 ft.
Platt-Bell No. 1 Govt., SW NW NE Sec. 9-34n-2w. S.D. 455 ft.
C. L. Smith, Agt., No. 1 Govt., SW SE NW Sec. 13-35n-2w. Drlg. 995 ft.
Big West Oil Co. No. 4 Engle, SW SW SW Sec. 1-35n-3w. T.D. 1,903 ft.; P.B. to 1,636 ft.; tstg.
Aspen O. & R. Co. No. 1 Govt., C NE SE Sec. 25-36n-3w. S.D. 2,050 ft.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. S.D. 2,318 ft.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. T.D. 1,665 ft.; cmtd. 7-in. on bttm.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26 35n-4w. S.D. 2,109 ft.

Yellowstone County

Signal O. & G. Co. No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; prep. to run 6⅝-in. to 4,950 ft. and test.
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,990 ft.; rng. 6¼-in.

UTAH

Grand County

A telegram from President Strong, of the Cane Creek Oil Co., to H. W. C. Prommel, of Denver, states that No. 2 Shaffer is on the caprock at 2,050 feet, making gas and is shut down for orders, and asking his advice as to the best way to handle the well. The 8¼-inch was mudded at 1,835 feet and hole is dry from that point to bottom. The problem encountered in the offset drilled a number of years ago by the old Midwest Exploration Co. was to shut off water at this horizon and save the oil and gas. The oil and gas apparently are not in a true sand, but in a bed of gypsum, anhydrite, lime, and shale embedded in salt above and below. Mr. Prommel advised them to drill in if the water has been shut off and a control head has been installed, but stated that it would be safer to run a string of 6-inch to the top of the horizon. Mr. Prommel, who originally mapped the structure, for years has contended that the oil comes through fissures leading from a closed structure to the northwest, and that the way to find the source of the oil is to drill along the fissure until the source is located.

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e, S.D.O. 2,050 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,110 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

Kansas Fields

(Continued from Page 83)

penetrated it to 3,366 feet, total depth, and flowed and pumped 738 bbls. of oil in 24 hours.

McPherson County

Continental Oil Co. No. 4 Wenger, SE NW NE Section 32-21-1w, Graber field, McPherson County, pumped 62 bbls. of oil daily after plugging back to 3,348 feet and was completed. It found Hunton lime at 3,311 feet, total depth 3,353 feet.

Same company's No. 8 Graber, CW½ E½ NW Section 32-21-1w, was a location.

Sedgwick County

Prunty Production Co. No. 2 Lewis, SW SE NE Section 17-25-1e, Goodrich pool, Sedgwick County, found Misener sand at 3,335 feet, total depth 3,337 feet, and had initial yield of 880 bbls. of oil, with 50 per cent water.

Butler-Greenwood Counties

National Refining Co. No. 1 Lucas, SW NE SE Section 10-28-6, McCullough pool, Butler County, Arbuckle lime at 3,047 feet, total depth, and was estimated good for 50 bbls. of oil daily, completed.

Shull Drilling Co. No. 3 Erickson, NW NE SE Section 17-24-13, Greenwood County, was dry and abandoned at 1,647 feet, total depth.

E. B. Shawver No. 2 Curtis, SW SW NW Section 28-31-1w, Wellington field, Sumner County, was building rotary rig.

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Dec. 10.—Crude and naphtha production from all Alberta fields in October totaled 667,454 bbls., a daily average of 21,531 compared with 867,939 bbls. in September, a daily average of 28,931 bbls. The decline was almost solely due to drastic proration in Turner Valley where the total production dropped from 863,229 to 663,578 bbls.

In Turner Valley crude production from the limestone in October was 614,891 bbls. and production, chiefly naphtha, from gas wells was 47,870 bbls., with 817 bbls. shallow crude. Outside Turner Valley, Red Coulee light crude dropped from 1,792 to 1,107 bbls. and Wainwright-Ribstone heavy crude from 1,141 to 1,101 bbls. Taber crude was down from 1,314 to 1,268 bbls. and Moose dome light crude declined from 463 to 400 bbls.

In Turner Valley the official figures follow the new Conservation Board classification, crude producers being those which yield a barrel of oil on less than 31,000 feet of gas, while gas wells exceed that ratio.

Among Turner Valley producers, Royalite Oil Co. ranked first with 101,576 bbls. of crude and 22,569 bbls. of naphtha. Sunset Oils, with two producers, yielded 44,292 bbls., and four wells of Brown Oil Corp. gave 43,109 bbls. Other major producers were Commoil, Ltd., 38,521 bbls. from two wells; West Turner Petroleums, 33,214 bbls.; Davies Petroleums, with three wells, 27,815 bbls. The largest individual producers were Frontier Royalties No. 1, with 25,700 bbls.; York Oils No. 1, with 24,593 bbls.; and Sundance Royalties No. 1, with 23,374 bbls. New wells appearing for the first time were Consolidated Royalties No. 1, with 10,829 bbls. and Richwell Oil Co. No. 1, with 8,039 bbls.

The October figures brought the total Alberta output for 10 months of 1938 up to 5,842,029 bbls., valued at over $7,300,000, compared with 2,066,338 bbls. valued at $2,500,000 in the same period last year.

New Conservation Orders

Following the passing of new conservation legislation at Edmonton, the Conservation Board issued an order increasing aggregate crude allowables for 61 wells from 11,500 to 12,500 bbls. a day. The largest producer under the new schedule is Royal Canadian Oil Co. No. 2 with 445 bbls.; other major producers being Sundance Royalties No. 1, with 415 bbls.; York Oils No. 1, 402 bbls.; Royalite No. 30, 393 bbls. and Frontier Royalties No. 1, 384 bbls. Anglo-Canadian Oil Co. No. 1 is given a temporary allowable, pending test, of 290 bbls.; Brown Oil Co. No. 5, 178 bbls. and Mercury Royalties No. 1, 137 bbls.

Gas Wells Restricted

A later order restricted the aggregate output of 102 gas wells to 3,240,687,000 feet per month. This is the first step in a systematic program designed to gradually eliminate wastage of gas. The new order, effective December 7, is of an interim nature, designed to meet gasoline absorption plant requirements, and increases the previous restricted output of around 40,000,000 feet a day to approximately 117,000,000 feet, permitting an output of about 1,160 bbls. of gasoline per day.

On January 15 a new order will restrict gas production to amounts needed for lighting, heating and generation of power. After January 15 installation of repressuring units will begin, and it is expected that after April 15 all gas used in crude production, which is now burned in flares, will be forced back into the formations. As repressuring facilities are provided, gas allowables will be increased.

A tentative program of repressuring for South Turner Valley involves the installation of three plants at an estimated total cost of $1,837,000, with operating cost of $98,987 a year and potential revenue ranging from $158,000 to $315,000, depending on the gasoline content of the gas. Residual gas will be forced back into the formations through selected low-pressure wells.

Under the former gas conservation order, only sufficient gas production was permitted to meet the fuel market demand, estimated 40,000,000 feet daily. Even when this was supplemented by gas from crude wells, the gasoline yield of absorption plants was sharply cut. The new order is a temporary measure to help these plants while repressuring schemes are worked out. Gas wastage from the Turner Valley field up to January last was estimated at 957,000,000,000 feet, with a value, at Calgary retail prices, of around $280,000,000.

Okalta Deep Test

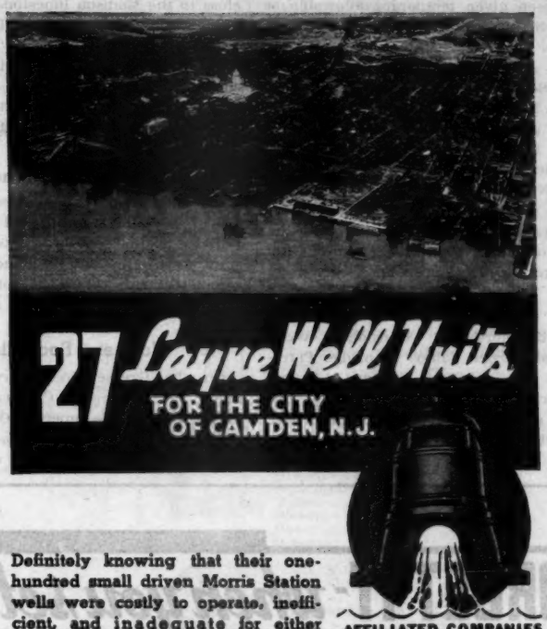
West of the proven field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, finished at 10,209 feet, has reamed out faulty plug and removed tubing. It is recementing to shut off salt water from the lower lime, and will test production in the upper porous horizon, where good shows were encountered, and which will be acidized.

Turner Valley Completions

West of the proven west flank crude area, Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, finished in the Madison limestone at 8,222 feet, has been given temporary allowable, pending test, of 290 bbls. a day.

In Section 32-18-2w5, West Turner Petroleums No. 3, LSD 6, finished at 7,811 feet, some 421 feet in the Madison, flowed 45 bbls. an hour on government test and has been given temporary allowable of 450 bls. a day, the highest in the field.

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 34, LSD 7, finished at 7,500 feet, 581 feet in the Madison, started around 400 bbls.,



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and is being given government test after acidizing. It looks like a big well.

In Section 29-18-2w5, Command Oils No. 1, LSD 14, finished at 7,908 feet, 502 feet in the limestone, and flowed by heads with the help of booster gas. It has a low gas-oil ratio of 500 feet, and has been given temporary allowable of 344 bbls. a day.

Tests in the Lime

In Section 20-18-2w5, Producers Crude Corp. No. 1, LSD 11, is below 7,864 feet after getting the Madison limestone at 7,585 feet, and will likely be the next completion.

In North Turner Valley, Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, is below 8,135 feet after getting the Madison at 8,045 feet. Separator and storage tank have been installed.

West Side Drilling

In the northwest extension of West-Central Turner Valley, Lethridge Petroleums No. 2, LSD 8, Section 24-19-3w5 has arranged for rotary outfit and will spud early in January. Location is 1 mile due north of Sun Ray Petroleums No. 1, the nearest drilling well, and 2½ miles northwest of Vulcan-Brown No. 1, the nearest producer.

In Section 29-18-2w5, Royalite Oil Co. No. 39, LSD 3, is working on cellar.

In Section 17-18-2w5, Extension Royalties No. 1, LSD 14, is in the Kootenay formation below 7,272 feet and getting close to the Madison limestone.

In Section 9-18-2w5, D. & D. Oils No. 1, LSD 12, is below 6,294 feet. Geo. Harris & Associates No. 1, LSD 13, is rigging.

West of the proven field, Royalite Oil Co. No. 38, LSD 16, Section 8-18-2w5, has spudded.

East Side Drilling

On the Calling Valley structure, east of Turner Valley, Sentinel Oil Co. No. 1, LSD 15, Section 8-20-2w5, is temporarily shut down at 7,300 feet and may be completed with rotary. It got some oil shows in the cardium sand around 7,250 feet.

Northern Foothills

On the Grease Creek structure 50 miles northwest of Calgary, Grease Creek Petroleums-Imperial Oil No. 1, LSD 2, Section 13-20-7w5 has finished road and is moving cable tool equipment to location. Snyder & Head will handle the contract and drilling will start in the cardium sandstone, with the Madison limestone expected around 4,000 feet. Test will probably spud this month.

On the Ram River structure west of Rocky Mountain House, Ram River Oils No. 1, Township 38-12w5 is below 142 feet.

On the Clearwater structure, Altoba No. 1, Section 31-34-9w5, diamond drill test bottoming at 1,318 feet, is reaming below 530 feet, intending to set 3-inch casing at 1,190 feet. Porous horizons with good oil shows were cored from 1,196 to 1,286 feet, and production test will be made before drilling deeper.

Southern Foothills

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is in softer formation below 6,443 feet, about 1,083 feet in the Madison limestone.

On the Savannah Creek structure, Anglo-Canadian Oil Co. No. 1, SW¼ Section 20-14-4w4 is rigging diamond drill equipment.

In the Pincher Creek area, Anglo-Canadian No. 1 Castle River, LSD 4, Section 11-6-1w5 is in the Belly River formation below 1,191 feet.

Del Bonita Producer

On the Del Bonita structure, south of Lethbridge, Terminal Oil Co. No. 1, NE¼ Section 18-1-21w4, bottoming in the Madison limestone was cleaned out and water cemented off and cased to bottom. In drilling two oil sands and a gas sand were found. The lower 10-foot oil sand was gun perforated and acidized, developing a flow of between 35 and 40 bbls. a day of 35-gravity crude. If tubed it is believed production would be increased. Crude is being flowed into a 3,500-bbl. tank, and later will be trucked to the Lethbridge refinery. New equipment is being secured to perforate the casing in the upper 35-foot oil sand and the gas sand. When originally completed in the top of the lime, some years ago, Terminal No. 1 showed around 1,700 pounds pressure, with gas flow estimated between 2,000,000 and 3,000,000 feet. Location is 50 miles south of Lethbridge, west of the international Red Coulee field, and north and west

(Continued on Page 106)

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Summary of Operations, All Fields, November

SUMMARY OF OPERATIONS

Field—	Comp.	Prod.	Dry	Gas
Eastern fields	253	486	20	64
Lima	3	0	1	2
Central Ohio	80	240	27	39
Indiana	11	87	7	1
Western Kentucky	58	3,407	23	1
Eastern Kentucky	19	102	0	7
Michigan	98	54,938	35	2
Illinois	364	81,622	42	3
Kansas	113	42,836	26	5
Oklahoma	106	11,001	29	7
No. Central Texas	221	46,081	85	3
West Texas	177	122,365	25	1
Texas Panhandle	48	12,494	2	13
East Texas	104	5,292	0	0
E. Central Texas	29	2,570	12	3
East Texas border	9	1,895	0	2
Gulf Coast Texas	103	28,068	24	1
Southwest Texas	192	21,554	66	10
Arkansas	22	12,940	7	0
North Louisiana	47	3,435	15	12
Gulf Coast La.	45	8,969	16	2
Mississippi	2	0	1	1
Montana	11	688	3	2
Wyoming	10	2,743	5	1
New Mexico	44	19,948	6	2
Colorado	2	3	1	0
Utah	1	0	1	0
Total Nov.	2,172	483,764	479	184
Total Oct.	2,336	617,430	535	174
Difference	164	133,666	56	10

Rigs and Wells Drilling

Field—	Rigs	Drlg.	Total
Eastern field	47	271	318
Lima	2	7	9
Central Ohio	37	109	146
Indiana	1	32	33
Western Kentucky	0	96	96
Eastern Kentucky	4	38	42
Michigan	28	106	134
Illinois	69	368	437
Kansas	29	144	173
Oklahoma	40	283	323
No. Central Texas	75	228	303
West Texas	64	248	312
Texas Panhandle	13	75	88
East Texas	21	41	62
East Central Texas	4	36	40
East Texas border	6	12	18
Gulf Coast Texas	17	110	127
Southwest Texas	25	183	208
Arkansas	14	40	54
North Louisiana	21	66	87
Gulf Coast La.	11	121	132
Mississippi	8	3	14
Montana	1	55	56
Wyoming	4	69	73
New Mexico	14	142	156
Colorado	2	31	33
Utah	1	3	4
Florida	2	0	2
Alabama	1	0	1
Total November	561	2,917	3,478
Total October	600	2,935	3,535
Difference	39	18	57

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	1	0	1	0	0	0
Beckham	0	0	0	0	0	1
Caddo	4	615	0	0	2	12
Carter	2	747	0	0	2	10
Choctaw	0	0	0	0	0	1
Cleveland	0	0	0	0	2	3
Coal	1	0	0	1	0	4
Comanche	2	4	1	0	0	2
Cotton	0	0	0	0	0	1
Creek	14	454	6	0	3	32
Garfield	0	0	0	0	1	6
Garvin	2	7	1	0	0	1
Grady	0	0	0	0	0	4
Hughes	0	0	0	0	1	4
Jackson	1	63	0	0	0	2
Jefferson	0	0	0	0	0	1
Kay	0	0	0	0	1	7
Kingfisher	0	0	0	0	0	1
Kiowa	0	0	0	0	0	3
Latimer	1	0	1	0	0	1
Lincoln	7	510	0	0	1	9
Logan	0	0	0	0	0	5
Marshall	0	0	0	0	0	1
McClain	1	0	1	0	0	0
McIntosh	1	0	1	0	0	0
Murray	0	0	0	0	1	0
Muskogee	2	5	1	0	1	8
Noble	0	0	0	0	0	5
Okfuskee	4	40	2	0	1	7
Oklahoma	3	302	1	0	5	12
Okmulgee	11	109	5	0	4	29
Osage	4	14	2	0	1	12
Pawnee	2	96	0	0	1	2
Payne	0	0	0	0	0	3
Pittsburg	1	0	0	1	0	2
Pontotoc	10	1,798	1	2	1	16
Pottawatomie	14	4,675	1	0	8	32
Seminole	7	1,105	1	0	3	20
Stephens	4	150	2	0	1	8
Tillman	1	293	0	0	0	2
Texas	2	0	0	2	0	2
Tulsa	3	12	1	1	0	6
Wagoner	1	2	0	0	0	4
Washita	0	0	0	0	0	2
Ttl. Nov.	106	11,001	29	7	40	283
Ttl. Oct.	110	17,780	40	9	42	268
Difference	4	6,779	11	2	2	15

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	0	0	0	0	1	1
Barton	24	10,165	7	0	4	19
Butler	2	130	0	0	0	6
Coffey	0	0	0	0	0	1
Cowley	12	2,843	3	1	2	13
Dickinson	0	0	0	0	0	1
Ellis	7	4,756	1	0	3	6
Ellsworth	1	1,731	0	0	0	2
Grant	2	0	0	2	0	0
Greenwood	6	102	1	0	1	4
Harvey	0	0	0	0	0	3
Kingman	0	0	0	0	0	2
Marion	2	187	0	0	1	2
McPherson	4	387	1	0	1	7
Meade	0	0	0	0	1	1
Ness	0	0	0	0	0	2
Norton	0	0	0	0	0	1
Ottawa	0	0	0	0	0	1
Pottawatomie	1	0	1	0	0	0
Pratt	1	275	0	0	0	1
Reno	1	0	1	0	0	4
Rice	12	6,271	3	1	3	15
Rooks	1	277	0	0	0	2
Russell	12	6,620	0	0	3	18
Saline	0	0	0	0	0	1
Scott	0	0	0	0	0	1
Sedgwick	3	1,145	1	1	1	5
Stafford	13	7,717	1	0	7	15
Sumner	3	210	2	0	0	5
Thomas	1	0	1	0	0	0
Wabaunsee	0	0	0	0	0	1
Woodson	5	20	3	0	1	4
Ttl. Nov.	113	42,836	26	5	29	144
Ttl. Oct.	121	37,199	23	1	22	179
Difference	8	5,637	3	4	7	35

TEXAS GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Amelia	1	13	0	0	0	1
Anahuac	3	745	0	0	0	3
Batson	1	228	0	0	0	1
Bay City	2	680	0	0	0	1
Barbers Hill	0	0	0	0	0	1
Cedar Point	1	624	0	0	0	1
Cheek	1	106	0	0	0	0
Clear Lake	1	0	1	0	0	0
Clam Lake	0	0	0	0	1	1
Cotton Lake	4	600	2	0	0	2
Cordelle	1	201	0	0	0	2
Danbury	1	90	0	0	0	2
Dickinson	4	1,634	1	0	2	8
Eureka	1	0	1	0	0	2
Esperson	0	0	0	0	0	1
Fairbanks	16	5,344	1	1	3	10
Francitas	2	329	0	0	0	0
Friendswood	8	4,272	1	0	1	3
Greens Lake	0	0	0	0	0	1
Hankamer	0	0	0	0	0	1
Hardin	3	1,482	0	0	2	3
Hastings	4	1,780	1	0	1	4
Hitchcock	3	464	2	0	0	1
High Island	0	0	0	0	0	1
League City	0	0	0	0	0	4
Lockridge	1	0	1	0	0	1
Labelle	0	0	0	0	0	1
Magnet	2	203	0	0	0	2
Manvel	3	1,780	0	0	0	2
McClosky	0	0	0	0	0	1
North Cheek	0	0	0	0	0	1
N. Markham	1	150	0	0	0	0
Old Ocean	1	250	0	0	0	5
Orchard	0	0	0	0	0	1
Orange	3	434	0	0	1	6
Pickett Ridge	3	391	1	0	0	2
Seabreeze	0	0	0	0	0	2
Sandy Point	0	0	0	0	0	1
Segno	0	0	0	0	0	3
Spindletop	1	313	0	0	0	1
S. Houston	1	0	1	0	0	0
Spurger	1	566	0	0	0	1
Thompson	2	130	0	0	0	3
Tomball	7	1,986	0	0	1	2
Turtle Bay	0	0	0	0	0	1
Van Vleck	0	0	0	0	0	1
West Ranch	1	248	0	0	0	1
W. Columbia	4	1,873	1	0	1	2
Withers	5	1,152	0	0	1	4
Miscellaneous	10	0	10	0	3	12
Ttl. Nov.	103	28,068	24	1	17	110
Ttl. Oct.	127	44,885	15	7	17	101
Difference	24	16,817	9	6	0	9

COASTAL LOUISIANA

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Abbeville	0	0	0	0	1	0
Bayou Blue	0	0	0	0	0	1
Bancroft	1	310	0	0	1	3
Bateman Lake	0	0	0	0	0	1
Bay St. Elaine	0	0	0	0	0	1
Bayou Bouillon	0	0	0	0	0	1
Bayou Cocotriz	1	70	0	0	0	1
Bayou Des Allemands	2	604	1	0	0	1
Big Lake	1	96	0	0	0	0
Black Bayou	0	0	0	0	0	1
Caillou Island	0	0	0	0	0	1
Cameron Meadows	1	10	0	0	0	1
Creole	0	0	0	0	0	1
Chacahoula	0	0	0	0	0	1
Charenton	3	850	0	0	0	5
Chalkley	1	0	0	1	0	0
Choctaw	0	0	0	0	0	2
Convent	0	0	0	0	0	1
Darrow	0	0	0	0	0	2
Dog Lake	0	0	0	0	0	1
East Baton Rouge	0	0	0	0	0	2
Edgerly	0	0	0	0	0	2
Fausse Point	0	0	0	0	0	1
Four Isle	1	0	0	1	0	0
Garden Island	0	0	0	0	0	1
Gillis	0	0	0	0	0	1
Grand Bay	0	0	0	0	0	1
Gueydan	1	0	1	0	0	2
Hackberry	2	66	1	0	1	6
Horseshoe Bayou	0	0	0	0	0	1
Jeanerette	0	0	0	0	1	1
Jefferson Island	1	252	0	0	0	1
Jennings	6	1,553	2	0	1	14
Lafitte	1	1,764	0	0	0	3
Lake Barre	1	65	0	0	0	0
Lake Long	0	0	0	0	0	1
Lake Pelto	0	0	0	0	0	1
Leesville	1	30	0	0	0	1
Lirette	1	43	0	0	0	1
N. Crowley	1	561	0	0	0	1
N. Tepetate	0	0	0	0	0	1
New Iberia	1	248	0	0	0	5
Port Barre	0	0	0	0	0	2
Potash	0	0	0	0	0	2
Quarantine Bay	0	0	0	0	0	2
Raceland	2	704	1	0	0	2
S. Roanoke	0	0	0	0	0	1
Sorrento	0	0	0	0	0	1
Starks	0	0	0	0	0	1
Sweet Lake	0	0	0	0	0	1
Sulphur	1	153	0	0	0	4
Timbalier Bay	0	0	0	0	0	1
Valentine	0	0	0	0	0	2
Venice	1	414	0	0	0	1
Villa Platte	4	1,176	0	0	2	4
Vinton	0	0	0	0	0	1
W. Gueydan	1	0	1	0	0	1
Woodlawn	0	0	0	0	0	2
Miscellaneous	9	0	9	0	4	21
Ttl. Nov.	45	8,969	16	2	11	121
Ttl. Oct.	42	10,903	11	1	14	113
Difference	3	1,934	5	1	3	8

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	7	5,288	2	0	1	17
Brewster	0	0	0	0	0	1
Cochran	0	0	0	0	0	1
Coke	1	0	1	0	0	1
Crane	4	1,290	0	0	3	8
Crockett	2	43	1	0	1	2
Culbertson	0	0	0	0	0	4
Concho	0	0	0	0	0	2
Dawson	0	0	0	0	1	1
Ector	42	43,129	1	0	9	54
El Paso	0	0	0	0	0	1
Gaines	3	3,448	0	0	0	8
Garza	0	0	0	0	0	1
Glasscock	1	0	1	0	0	1
Hockley	1	0	1	0	0	5
Howard	16	9,389	1	0	6	17
Hudspeth	0	0	0	0	0	2
Irion	1	0	1	0	0	0
Jeff Davis	0	0	0	0	0	1
Kent	0	0	0	0	0	2
Kimble	0	0	0	0	0	2
Loving	1	41	0	0	0	0
Lynn	0	0	0	0	0	1
Menard	0	0	0	0	0	1
Mitchell	0	0	0	0	0	1
McCulloch	1	0	0	1	0	0
Nolan	0	0	0	0	0	2
Pecos	18	2,992	5	0	14	31
Presido	0	0	0	0	0	2
Reagan	0	0	0	0	0	1
Reeves	0	0	0	0	0	2
Runnels	2	0	2	0	0	0
Schleicher	0	0	0	0	1	1
Scurry	1	89	0	0	3	1
Sterling	1	0	1	0	0	0
Sutton	0	0	0	0	0	1
Terrell	0	0	0	0	0	1
Tom Green	1	0	1	0	0	2
Upton	16	12,910	3	0	5	9
Val Verde	0	0	0	0	0	1
Ward	18	9,221	3	0	11	26
Winkler	17	16,532	0	0	2	13
Yoakum	23	17,993	1	0	7	21
Ttl. Nov.	177	122,365	25	1	64	248
Ttl. Oct.	148	128,876	18	1	67	274
Difference	29	6,511	7	0	3	26

EAST CENTRAL AND EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	6	189	0	3	1	5
Angelina	0	0	0	0	0	0
Cherokee	2	45	0	0	1	1
Collins	0	0	0	0	0	1
Dallas	0	0	0	0	0	1
Falls	1	0	1	0	0	1
Franklin	3	1,009	0	0	0	1
Freestone	4	427	1	0	0	4
Grayson	0	0	0	0	1	4
Gregg	58	3,208	0	0	16	23
Henderson	1	195	0	0	1	3
Houston	3	253	1	0	0	2
Kaufman	0	0	0	0	1	2
Lamar	0	0	0	0	0	1
Leon	1	171	0	0	0	0
McLennan	1	0	1	0	0	3
Navarro	2	0	2	0	0	0
Rains	0	0	0	0	0	1
Red River	3	0	3	0	0	2
Rusk	31	1,475	0	0	2	9
Smith	4	177	0	0	0	3
Titus	1	281	0	0	0	1
Trinity	1	0	1	0	0	3
Upshur	9	432	0	0	2	5
Van Zandt	2	0	2	0	0	1
Ttl. Nov.	133	7,862	12	3	25	77
Ttl. Oct.	114	7,068	8	2	25	78
Difference	19	794	4	1	0	1

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	9	1,213	0	6	1	5
Collings'th	0	0	0	0	1	2
Deaf Smith	0	0	0	0	1	1
Donley	0	0	0	0	0	1
Dickens	1	0	1	0	0	3
Floyd	0	0	0	0	0	1
Gray	9	3,626	0	0	3	19
Hall	1	0	1	0	0	0
Hutchinson	20	7,635	0	0	7	30
Lipscomb	0	0	0	0	0	1
Moore	5	0	0	5	0	6
Potter	0	0	0	0	0	1
Roberts	0	0	0	0	0	2
Wheeler	3	20	0	2	0	3
Ttl. Nov.	48	12,494	2	13	13	75
Ttl. Oct.	42	13,723	2	5	15	91
Difference	6	1,229	0	8	2	16

CENTRAL AND NORTH TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	28	4,638	10	0	4	13
Baylor	2	0	2	0	0	2
Brown	11	78	4	1	4	13
Callahan	9	33	5	0	1	7
Clay	16	1,477	7	0	4	11
Coleman	3	0	2	1	2	7
Comanche	7	76	3	0	2	4
Cooke	10	204	5	0	1	6
Denton	0	0	0	0	1	3
Erath	0	0	0	0	0	2
Eastland	2	158	0	0	1	5
Fisher	4	895	1	0	1	0
Foard	1	0	1	0	0	0
Hamilton	0	0	0	0	0	2
Haskell	0	0	0	0	2	4
Hood	0	0	0	0	0	2
Jack	12	1,245	7	0	6	15
Johnson	0	0	0	0	0	1
Jones	16	4,833	3	0	0	16
Knox	1	0	1	0	0	0
Montague	2	226	0	0	1	6
Palo Pinto	5	26	4	0	1	2
Parker	1	0	1	0	0	2
Shackelford	15	1,095	6	1	0	12
Stephens	1	27	0	0	2	5
Tarrant	0	0	0	0	0	2
Taylor	1	0	1	0	0	3
Throckmorton	1	18	0	0	0	6
Wichita	42	26,122	4	0	29	46
Wilbarger	4	0	4	0	2	3
Wise	0	0	0	0	1	5
Young	27	4,930	14	0	10	23
Ttl. Nov.	221	46,081	85	3	75	228
Ttl. Oct.	200	48,648	79	2	83	228
Difference	21	2,567	6	1	8	0

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Agua Dulce	1	67	0	0	0	2
Alice (South)	6	708	0	0	1	6
Alta Vista	0	0	0	0	0	1
Angelita	0	0	0	0	0	1
Armagosa	1	0	1	0	0	0
Barbacoas	1	0	1	0	0	0
Banderia	1	0	0	1	0	0
Benavides	7	741	1	0	1	4
Branyon	0	0	0	0	0	1
Calliham	1	0	1	0	0	0
Church	0	0	0	0	0	1
Casa Blanca	5	225	1	1	0	0
Cedro Hill	1	50	0	0	0	0
Chicon Lake	0	0	0	0	0	1
C. Driscoll	3	379	0	0	1	3
Comitas	3	82	1	0	0	0
Coffey (Mitchell Lake)	1	75	0	0	0	0
Dale	2	65	1	0	0	0
Darst Creek	2	271	0	0	1	4
Driscoll	2	442	0	0	0	1
Dunlap	0	0	0	0	0	1
Eagle Hill	4	185	1	0	0	2
East Placedo	2	85	1	0	0	1
E. Premont	1	83	0	0	0	1
Escobas	2	65	0	0	0	1
East White Point	2	253	0	0	0	3
Ezzell	4	436	1	0	2	3
Fitzsimmons	9	1,248	0	0	2	4
Flour Bluff	0	0	0	0	0	1
Heyser	7	987	0	2	1	3

Hoffman	14	1,114	1	0	1	7
Hondo	1	1	0	0	0	0
Ina	0	0	0	0	0	1
Kelsey	0	0	0	0	1	2
Killam	0	0	0	0	0	1
Labbe	0	0	0	0	0	1
Keeran	1	0	0	1	0	1
Las Animas	0	0	0	0	0	0
La Rosa	4	677	1	0	0	5
Loma Valdez	0	0	0	0	0	1
Luby	5	598	0	0	0	4
Luling	1	45	0	0	0	2
Lundell	1	81	0	0	0	1
Margo	1	0	1	0	0	0
McCampbell	0	0	0	0	2	8
McFaddin	2	216	0	0	0	3
Mercedes	0	0	0	0	0	1
Mirando Valley	1	70	0	0	0	1
Munson	4	141	1	0	0	2
Nash Creek	0	0	0	0	0	1
Oakville	1	0	0	1	0	1
Piedra Pintas	1	0	1	0	0	0
Plymouth	3	482	0	0	0	3
Premont	0	0	0	0	0	1
Rancho Solo	2	87	0	0	0	1
Refugio	0	0	0	0	0	2
Richard King	2	251	0	0	0	1
Riddle	0	0	0	0	0	2
Sacatosa	1	0	1	0	0	0
Salt Flat	2	48	0	0	1	3
Samfordyce	4	22	0	2	1	3
San Jose	1	15	0	0	0	0
Saxet	4	397	0	1	1	7
S. Clara Driscoll	1	0	0	1	1	0
Stratton	1	100	0	0	0	1
Sun	2	123	1	0	0	4
Sweden	0	0	0	0	0	1
Telferner	2	0	2	0	0	0
Tesoro	1	0	1	0	0	2
Tomoconnor	13	10,409	1	0	1	4
Tuisita	1	0	1	0	0	0
Van Ormy	1	3	0	0	0	1
Yoast	0	0	0	0	0	1
West Saxet	3	227	1	0	1	3
Miscellaneous	43	0	43	0	6	55
Ttl. Nov.	192	21,554	66	10	25	183
Ttl. Oct.	256	29,901	82	9	30	213
Difference	64	8,347	16	1	5	30

EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	*Rgs.	Dlg.
Cass-Rodessa	1	0	0	1	0	0
Harrison	1	5	0	0	0	1
Marion-Rodessa	7	1,890	0	1	0	9
Marion-Other	0	0	0	0	2	0
Panola	0	0	0	0	2	0
Sabine	0	0	0	0	1	1
San Augustine	0	0	0	0	1	0
Shelby	0	0	0	0	0	1
Total Nov.	9	1,895	0	2	6	12
Total Oct.	8	840	2	2	9	10
Difference	1	1,055	2	0	3	2

*Gas production: Cass County, 4,500,000 ft.; Marion County, 30,000,000 ft.

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	2	0
Columbia	2	1,075	0	0	2	6
Hot Spring	0	0	0	0	0	1
Lafayette	0	0	0	0	1	1
Lincoln	0	0	0	0	1	0
Little River	0	0	0	0	0	3
Lonoke	0	0	0	0	3	1
Miller-Rodessa	2	425	1	0	2	0
Mississippi	0	0	0	0	0	0
Nevada	1	0	1	0	0	0
Ouachita	1	30	0	0	0	0
Pike	1	0	1	0	0	0
Pulaski	0	0	0	0	1	0
Union	15	11,410	4	0	2	27
Total Nov.	22	12,940	7	0	14	40
Total Oct.	20	10,630	1	2	18	33
Difference	2	2,310	6	2	4	7

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas	*Rgs.	Dlg.
Blenville	0	0	0	0	1	1
Bossier	4	45	0	0	2	3
Caddo-Rodessa	1	200	0	0	0	1
Caddo-Other	17	955	6	2	5	20
Catahoula	0	0	0	0	0	1
Claiborne	2	80	0	0	1	1
Concordia	0	0	0	0	1	0
De Soto	1	0	1	0	2	2
Grant	2	0	2	0	0	1
La Salle	2	50	1	0	1	2
Morehouse	2	0	0	2	0	0
Natchitoches	0	0	0	0	0	1
Red River	0	0	0	0	2	2
Sabine	3	25	2	0	3	12
Tensas	0	0	0	0	1	0
Union	5	0	0	5	0	2
Webster	8	2,080	3	3	2	17
Total Nov.	47	3,435	15	12	21	66
Total Oct.	46	4,215	20	7	32	60
Difference	1	780	5	5	11	6

*Gas production: Caddo Parish, 11,500,000 ft.; Morehouse Parish, 22,000,000 ft. Union Parish, 43,500,000 ft.; Webster Parish, 21,000,000 ft.

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	*Dlg.	Ttl.
Calhoun	0	0	0	0	2	0
Clarke	0	0	0	0	1	0
George	0	0	0	0	1	0
Harrison	0	0	0	0	1	0
Hinds	1	0	1	0	2	0
Rankin	1	0	0	1	0	1
Simpson	0	0	0	0	1	1
Yalobusha	0	0	0	0	0	1
Ttl. Nov.	2	0	1	1	8	3
Ttl. Oct.	2	0	2	0	7	3
Difference	0	0	1	1	1	0

*Gas production: Rankin County, 40,000,000 feet.

FLORIDA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Lake	0	0	0	0	1	0
Nassau	0	0	0	0	1	0
Ttl. Nov.	0	0	0	0	2	0
Ttl. Oct.	0	0	0	0	2	0
Difference	0	0	0	0	0	0

ALABAMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barbour	0	0	0	0	1	0
Ttl. Nov.	0	0	0	0	1	0
Ttl. Oct.	0	0	0	0	0	0
Difference	0	0	0	0	1	0

WESTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Breckinridge	0	0	0	0	0	1
Butler	9	42	5	0	0	9
Christian	0	0	0	0	0	2
Caldwell	0	0	0	0	0	1
Daviess	19	2,575	6	1	0	26
Grayson	0	0	0	0	0	2
Hancock	8	105	0	0	0	5
Henderson	8	525	5	0	0	20
Hopkins	1	0	1	0	0	2
McLean	3	115	1	0	0	8
Muhlenburg	0	0	0	0	0	2
Ohio	8	45	3	0	0	18
Webster	2	0	2	0	0	0
Ttl. Nov.	58	3.407	23	1	0	96
Ttl. Oct.	81	7,195	32	4	0	85
Difference	23	3,788	9	3	0	11

EASTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Lee	3	11	0	0	1	6
Lawrence	1	3	0	0	0	0
Knott	3	0	0	3	0	5
Powell	3	20	0	0	0	3
Martin	4	15	0	2	2	9
Floyd	3	43	0	1	1	8
Pike	1	0	0	1	0	5
Wolfe	1	10	0	0	0	2
Ttl. Nov.	19	102	0	7	4	38
Ttl. Oct.	24	125	6	5	4	34
Difference	5	23	6	2	0	4

ROCKY MOUNTAIN AREA

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bernalillo	0	0	0	0	0	2
McKinley	0	0	0	0	1	5
Rio Arriba	1	0	1	0	1	0
San Juan	2	148	0	0	1	10
San Miguel	0	0	0	0	0	3
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	2
Valencia	0	0	0	0	0	3
Lea	39	19,800	4	1	9	85
Eddy	2	0	1	1	2	26
Chaves	0	0	0	0	0	2
De Baca	0	0	0	0	0	2
Roosevelt	0	0	0	0	0	1
Ttl. Nov.	44	19,948	6	2	14	142
Ttl. Oct.	57	15,730	7	1	13	139
Difference	13	4,218	1	1	1	3

Utah

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Ttl.
Grand	1	0	1	0	0	1
Miscellaneous	0	0	0	0	1	2
Total Nov.	1	0	1	0	1	3
Total Oct.	0	0	0	0	1	4
Difference	1	0	1	0	0	1

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Ttl.
Adams	0	0	0	0	0	2
Archuleta	0	0	0	0	0	3
Elbert	0	0	0	0	0	1
Fremont	1	3	0	0	0	1
La Plata	0	0	0	0	0	1
Las Animas	0	0	0	0	0	2
Mesa	0	0	0	0	0	2
Moffat	0	0	0	0	0	4
Park	0	0	0	0	0	2
Prowers	0	0	0	0	0	1
Pueblo	0	0	0	0	1	2
Rio Blanco	0	0	0	0	0	1
Routt	1	0	1	0	0	2
Miscellaneous	0	0	0	0	1	7
Total Nov.	2	3	1	0	2	31
Total Oct.	3	180	1	0	1	31
Difference	1	177	0	0	1	0

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Ttl.
Big Horn	1	0	1	0	1	6
Carbon	1	0	1	0	1	4
Converse	1	0	1	0	0	12
Fremont	2	0	2	0	0	6
Hot Springs	0	0	0	0	0	3
Lincoln	0	0	0	0	0	2
Natrona	1	230	0	0	0	2
Niobrara	2	2,463	0	0	2	8
Park	1	0	0	1	0	2
Sublette	0	0	0	0	0	4
Sweetwater	0	0	0	0	0	3
Uinta	0	0	0	0	0	2
Washakie	0	0	0	0	0	2
Weston	1	50	0	0	0	9
Miscellaneous	0	0	0	0	0	4
Total Nov.	10	2,743	5	1	4	69
Total Oct.	17	4,596	3	1	4	67
Difference	7	1,853	2	0	0	2

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	0	2
Carbon	0	0	0	0	1	7
Fergus	0	0	0	0	0	5
Glacier	4	545	0	1	0	3
Hill	0	0	0	0	0	2
Judith Basin	0	0	0	0	0	2
Petroleum	0	0	0	0	0	3
Teton	0	0	0	0	0	2
Toole	4	35	2	0	0	11
Yellowstone	0	0	0	0	0	2
Miscellaneous	0	0	0	0	0	14
Total Nov.	8	580	2	1	1	53
Total Oct.	11	688	3	2	1	55
Difference	3	108	1	1	0	2

INDIANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Blackford	0	0	0	0	0	1
Clay	0	0	0	0	0	1
Crawford	0	0	0	0	0	2
Daviess	0	0	0	0	0	2
Decatur	0	0	0	0	0	1
Gibson	0	0	0	0	1	2
Greene	1	0	1	0	0	0
Harrison	0	0	0	0	0	1
Knox	0	0	0	0	0	2
Madison	0	0	0	0	0	2
Martin	0	0	0	0	0	1
Orange	0	0	0	0	0	1
Perry	3	5	1	1	0	1
Pike	2	5	1	0	0	1
Posey	1	77	0	0	0	1
Rush	1	0	1	0	0	0
Shelby	1	0	1	0	0	1
Spencer	0	0	0	0	0	3
Starke	0	0	0	0	0	1
Sullivan	0	0	0	0	0	3
Vanderburgh	2	0	2	0	0	0
Vigo	0	0	0	0	0	2
Warrick	0	0	0	0	0	3
Total Nov.	11	87	7	1	1	32
Total Oct.	20	190	8	7	1	43
Difference	9	103	1	6	0	11

ILLINOIS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bond	0	0	0	0	0	3
Brown	1	0	1	0	0	0
Champaign	0	0	0	0	1	3
Clark	3	2	2	0	1	3
Clay	19	6,899	1	0	1	7
Clinton	7	296	1	0	7	12
Coles	0	0	0	0	0	3
Crawford	3	85	1	0	0	1
Cumberland	0	0	0	0	0	2
Dewitt	0	0	0	0	0	2
Edgar	2	0	2	0	1	2
Edwards	0	0	0	0	0	1
Effingham	0	0	0	0	0	1
Fayette	119	21,996	10	0	21	108
Franklin	0	0	0	0	0	1
Fulton	1	0	1	0	0	1
Gallatin	0	0	0	0	0	2
Hamilton	1	0	1	0	0	1
Hancock	1	0	1	0	0	0
Jefferson	4	507	0	0	0	11
Johnson	0	0	0	0	0	1
Lawrence	5	35	1	3	1	4
McDonough	1	0	1	0	0	4
Macoupin	1	0	1	0	0	1
Madison	0	0	0	0	0	1
Marion	166	44,806	9	0	32	154
Massac	0	0	0	0	0	1
Menard	0	0	0	0	0	1
Montgomery	0	0	0	0	0	4
Morgan	1	0	1	0	0	0
Perry	1	0	1	0	0	0
Piatt	0	0	0	0	0	1
Randolph	0	0	0	0	0	2
Richland	8	2,948	0	0	2	4
St. Clair	0	0	0	0	0	3
Saline	0	0	0	0	0	1
Shelby	6	0	6	0	1	5
Wabash	0	0	0	0	0	1
Washington	0	0	0	0	1	2
Wayne	14	4,048	1	0	0	5
White	0	0	0	0	0	1
Williamson	0	0	0	0	0	1
Jasper	0	0	0	0	0	2
Jackson	0	0	0	0	0	1
Sangamon	0	0	0	0	0	1
Schuyler	0	0	0	0	0	1
Knox	0	0	0	0	0	1
Pike	0	0	0	0	0	1
Ttl. Nov.	364	81,622	42	3	69	368
Ttl. Oct.	402	102,403	71	3	60	314
Difference	38	20,781	29	0	9	54

MICHIGAN

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	1	3
Bentley	3	273	0	0	0	3
Bloomingdale	33	13,157	7	0	7	14
Buckeye	1	150	0	0	0	2
Clayton	0	0	0	0	0	1
Deerfield	0	0	0	0	0	1
Dorr	1	240	0	0	0	2
Edenville	3	895	1	0	0	1
Edmore	0	0	0	0	0	1
Freeman	18	38,291	3	0	10	16
Fremont	1	0	1	0	0	1
Lincoln	2	0	1	1	0	0
Loomis	1	250	0	0	0	0
Monterey	1	45	0	0	0	0
Overisel	1	44	0	0	1	1
Salem	2	196	0	0	0	3
Sherman	0	0	0	0	0	3
Skunk Lake	1	0	1	0	0	4
Stewart	3	718	1	0	0	3
Trowbridge	0	0	0	0	0	2
West Branch	2	75	0	0	2	1
Winegars	1	40	0	0	0	1
Winfield	0	0	0	0	1	1
Wise	1	0	0	1	1	0
Wisner	0	0	0	0	0	2
Wildcats	23	564	20	0	5	39
Ttl. Nov.	98	54,938	35	2	28	106
Ttl. Oct.	138	56,421	54	6	24	118
Difference	40	1,483	19	4	4	12

CENTRAL OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	2	0	1	1	1	4
Athens	7	9	0	5	4	7
Belmont	0	0	0	0	1	1
Coshocton	2	0	1	1	3	1
Cuyahoga	2	0	0	2	3	3
Delaware	1	0	1	0	0	0
Fairfield	1	0	1	0	1	1
Gallia	2	0	1	1	0	0
Guernsey	9	0	6	3	4	4
Harrison	0	0	0	0	1	0
Hocking	0	0	0	0	0	1
Holmes	1	0	1	0	0	1
Huron	0	0	0	0	0	2
Knox	4	6	1	2	3	9
Lawrence	1	0	0	1	0	3
Licking	11	148	1	2	4	4
Lorain	2	70	0	1	0	2
Medina	4	6	2	1	0	4
Meigs	4	0	0	4	1	8
Monroe	1	0	1	0	0	4
Morgan	2	0	0	2	3	3
Muskingum	1	0	1	0	0	4
Nobel	6	0	2	4	0	6
Perry	0	0	0	0	0	7
Richland	0	0	0	0	1	1
Stark	4	0	1	3	0	8
Summit	1	0	0	1	0	1
Tuscarawas	0	0	0	0	0	3
Washington	11	1	6	4	6	16
Wayne	1	0	0	1	1	1
Ttl. Nov.	80	240	27	39	37	109
Ttl. Oct.	72	215	25	32	33	105
Difference	8	25	2	7	4	4

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Hancock	1	0	0	1	0	1
Putnam	0	0	0	0	1	1
Seneca	2	0	1	1	1	4
Wood	0	0	0	0	0	1
Ttl. Nov.	3	0	1	2	2	7
Ttl. Oct.	3	50	1	0	2	9
Difference	0	50	0	2	0	2

EASTERN FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bradford	*101	115	0	0	3	38
Allegany	†37	27	0	1	2	19
Middle dist.	9	10	1	0	2	11
Butler-Armstrong	4	7	0	1	4	13
N. Y.-Pa. gas	4	0	2	2	4	24
S. W. Va.	12	4	2	9	4	25
S. E. Ohio	25	300	6	5	5	31
W. Virginia	61	23	9	46	23	110
Total Nov.	253	486	20	64	47	271
Total Oct.	272	383	21	65	70	273
Difference	19	103	1	1	23	2

*Includes 34 water intake wells.
†Includes 11 water intake wells.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Cole, F. E., No. 18 Paderewski, S. Maria, S. Barbara	28-10-34	5,545	sd. sh. drlg.
O'Donnell, J. E., No. 1 Helen, Lompoc, S. Barbara	8- 7-33	4,997	dry; abd.
Douglas & Stratton, No. 1 Los Alamos, S. Barbara	8- 8-33	7,237	br. sh. drlg.
Richfield Oil, No. 1 Tinquaic, Foxen Can., S. Barb.	36- 9-32	2,196	sd. sh. drlg.
Barnsdall Oil, No. 1 Pezzoni, Gato Ridge, S. Barbara	15- 8-32	4,494	idle
Ventura Drlg., No. 1 Ojai, Ventura	10- 3-23	2,000	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,819	sd. sh. drlg.
Claran Oil, No. 1 Hardison, Sespe, Ventura	22- 4-20	1,877	sd. sh. drlg.
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,399	sd. sh. drlg.
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	204	sd. sh. drlg.
Speik Oil, No. 2 Speik, Sespe, Ventura	33- 5-19	3,500	repair rig
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	1,644	bailing
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,370	rd. sd. drlg.
Continental Oil, No. 10 Grubb, S. Miguelito, Ventura	24- 3-24	1,994	sd. sh. drlg.
C. C. M. Oil, No. 6-A Hobson, Padre Canyon, Ventura	15- 3-24	4,750	sd. sh. drlg.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	7,303	fish D.P.
C. C. M. Oil, No. 18-B Hobson, Rincon, Ventura	17- 3-24	4,296	sd. sh. drlg.
Tide Water A. O., No. 36 V.L.W., Vent. Ave., Vent.	25- 3-23	7,900	gr. sh. drlg.
Tide Water A. O., No. 40 V.L.W., Vent. Ave., Vent.	25- 3-23	3,060	sd. sh. drlg.
Tide Water A. O., No. 14 McGonigle, V. Ave., Vent.	27- 3-23	..	bldg. rig.
Tide Water A. O., No. 81 Lloyd, Vent. Ave., Vent.	27- 3-23	7,600	fish junk
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	27- 3-23	3,882	sd. sh. drlg.
Tide Water A. O., No. 126 Lloyd, Vent. Ave., Vent.	27- 3-23	8,947	hd. sh. drlg.
Tide Water A. O., No. 128 Lloyd, Vent. Ave., Vent.	27- 3-23	6,730	hd. sh. drlg.
Tide Water A. O., No. 134 Lloyd, Vent. Ave., Vent.	27- 3-23	8,339	redrlg. 4,340
Tide Water A. O., No. 7 Hartman, Vent. Ave., Vent.	22- 3-23	10,960	sd. sh. drlg.
Shell Oil, No. 97 Taylor, Ventura Ave., Ventura	21- 3-23	2,854	sd. sh. drlg.
Shell Oil, No. 32 Edison, Ventura Ave., Ventura	21- 3-23	7,860	cmtd. 7,689
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	5,177	sd. sh. drlg.
Lloyd Corp., No. 2 Dabney-Lloyd, Vent. Ave., Vent.	23- 3-23	7,303	P. B. 7,060
Ventura Expl., No. 1 Sexton, Ventura Ave., Ventura	30- 3-22	9,525	test W.S.O.
Belridge Oil, No. 27-4, North Belridge, Kern	27-27-20	8,115	brn. sh. drlg.
Belridge Oil, No. 35-26-A, North Belridge, Kern	35-27-20	3,274	sd. sh. drlg.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	5,760	sd. sh. drlg.
Belridge Oil, No. 28-2, North Belridge, Kern	28-27-20	802	sd. sh. drlg.
Tide Water A. O., No. 23-3, North Belridge, Kern	22-27-20	....	rigged up
Tide Water A. O., No. 22, North Belridge, Kern	21-27-20	8,450	swabbing
Richfield Oil, No. 2 Olcese, Round Mountain, Kern	17-28-29	2,149	dry; abd.
Hast Oil, No. 5 Kern, Kern River, Kern	34-28-28	512	O.S. drlg.
Barnhart & Morrow, No. 2 Smith, Mount Poso, Kern	34-27-27	2,147	dry; abd.
O. F. W. Oil, No. 1 Milburn, Mount Poso, Kern	27-26-28	1,414	O.S. drlg.
Ring Oil, No. 5 Shapiro, Mount Poso, Kern	32-27-28	1,260	sd. sh. drlg.
Gilstrap, F. M., No. 1 Carter, Mount Poso, Kern	7-27-27	196	sd. sh. drlg.
Western Expl. No. 1 Hyde, Mount Poso, Kern	32-26-28	1,853	will abdn.
Richfield Oil, No. 1, Union Avenue, Kern	5-30-28	8,270	sd. sh. drlg.
O'Reily, F., No. 1 Berree, Edison, Kern	5-30-29	2,586	P.B. 2,509
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	10,140	hd. sd. drlg.
West. Gulf Oil, No. 40-B, KCL, Fruitvale, Kern	22-29-27	3,831	rig to pump
Renner, G. E., No. 2 R.H.L., Sivert, Kern	27-30-30	2,300	hd. sh. drlg.
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	13,644	dry; abd.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	9,090	sd. sh. drlg.
Seaboard Oil, No. 7 Kern, Buttonwillow, Kern	5-28-23	2,982	sd. sh. drlg.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	11,593	rigging up
Union Oil, No. 7-34, KCL, Rio Bravo, Kern	34-28-25	8,681	sd. sh. drlg.
General Pet., No. 3 Wagoner, Rio Bravo, Kern	35-28-25	10,195	sd. sh. drlg.
Shell Oil, No. 58-8-A, KCL, Famosa, Kern	8-27-26	9,190	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,903	pull liner
Standard Oil, No. 11-16, KCL, Greeley, Kern	20-29-26	7,990	sd. sh. drlg.
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	10,040	sd. sh. drlg.
Superior Oil, No. 12 KCL, Greeley, Kern	3-30-26	7,984	sd. sh. drlg.
Continental Oil, No. 1-E, KCL, Stevens, Kern	17-30-26	8,574	dry; abd.
Shell Oil, No. 72-29-A, KCL, Ten Section, Kern	29-30-26	8,220	O.S. drlg.
Shell Oil, No. 34-14-A, KCL, Canal, Kern	14-30-25	214	sd. sh. drlg.
Shell Oil, No. 47-14-A, KCL, Canal, Kern	14-30-25	8,336	flow 928 b.d.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	9,980	sd. sh. drlg.
Ohio Oil, No. 10-E, KCL, Canal, Kern	14-30-25	3,994	sd. sh. drlg.
Standard Oil, No. 1 Rio Bravo Fee, Canal, Kern	12-30-25	7,864	redrlg. 6,830
Richfield Oil, No. 1, KCL, Tupman, Kern	32-30-25	8,677	cleaning out
Wilbent Oil, No. 2 Royer, Midway-Sunset, Kern	7-11-23	9,005	tubing stuck
Standard Oil, No. 223-15-D, Midway-Sunset, Kern	15-32-24	3,280	sd. sh. drlg.
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	5,035	tested wet
National Oil, No. 31 Midway, Midway-Sunset, Kern	35-32-23	1,760	br. sh. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	8,820	sd. sh. drlg.
Tide Water A. O., No. 2 S.P., Tejon Ranch, Kern	15-11-19	4,093	sd. sh. drlg.
Tide Water A. O., No. 1-F, North Coalinga, Fresno	1-19-15	6,820	hd. sh. drlg.
Lytle, R. S., No. 88-7-F, East Coalinga, Fresno	7-20-16	8,021	flow 4,215 b.d.
Lytle, R. S., No. 37-7-F, East Coalinga, Fresno	7-20-16	....	rigging up
Standard Oil, No. 1-17-F Fee, East Coalinga, Fresno	17-20-16	5,990	sd. sh. drlg.
Superior Oil, No. 1 Cagle, East Coalinga, Fresno	6-20-16	5,591	sd. sh. drlg.
Superior Oil, No. 2 Fee, East Coalinga, Fresno	7-20-16	6,790	O.S. drlg.
Jarvis, L. F., No. 2 Fee, West Coalinga, Fresno	14-20-14	150	idle
Pierce, C., No. 1 Shorb, Panoche, Fresno	16-14-12	1,507	idle
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	4,470	cleaning out
Stuart Oil, No. 1 Alcalde, Alcalde, Fresno	12-21-14	1,052	sd. sh. drlg.
Union Oil, No. 4 King, Kettleman North, Fresno	29-21-17	8,520	redrlg. 7,650
K.N.D.A., No. 6-16-Q, Kettleman North, Kings	16-22-18	5,562	br. sh. drlg.
K.N.D.A., No. 36-16-Q, Kettleman North, Kings	16-22-18	7,885	cleaning out
K.N.D.A., No. 65-20-Q, Kettleman North, Kings	20-22-18	7,651	gr. sd. drlg.
K.N.D.A., No. 36-22-Q, Kettleman North, Kings	22-22-18	5,480	br. sh. drlg.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	11,030	testing
Standard Oil, No. 56-1-P, Kettleman North, Kings	1-22-17	5,897	sd. sh. drlg.
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	9,074	dry; abd.
Standard Oil, No. 76-7-Q, Kettleman North, Kings	7-22-18	5,274	sd. sh. drlg.
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	7,860	flow 2,500 b.d.
Standard Oil, No. 61-21-Q, Kettleman North, Kings	21-22-18	7,960	flow 2,135 b.d.
Tannehill, L. B., No. 1 Reliz, King City, Monterey	36-20- 8	2,590	dry; abd.
Cal. Pet. Prod., No. 1 Irons, Cuyama, S. Luis Obispo	19-10-24	1,720	cmtd. fish
Epco., Inc., No. 1 Ajax, Union, San Luis Obispo	27-26-13	2,630	gr. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4- 1	5,334	P.B. 3,150
Orestimba Oil, No. 1 Orestimba, Stanislaus	12- 7- 7	1,405	bl. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Antelope Valley Oil, No. 1 Palmdale, Los Angeles	17- 6-12	958	sd. sh. drlg.
Mojave Pet., No. 1 Hillside, Gorman, Los Angeles	5- 8-18	477	sd. sh. drlg.
Texas Co., No. 1 Anderson, Ocean Park, Los Angeles	17- 2-15	7,140	sd. sh. drlg.
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,100	idle
Amron Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,210	will P. B.
A. & T. Oil, No. 2 Fee, Torrance, Los Angeles	23- 4-14	4,381	sd. sh. drlg.
Alford Oil, No. 11 Lomita, Torrance, Los Angeles	23- 4-14	5,192	O.S. drlg.
Andrews, W. P., No. 10 Kirk, Torrance, L. Angeles	23- 4-14	4,697	sd. sh. drlg.
Benker Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	....	location abd.
D. & W. Oil, No. 4 Lomita, Torrance, Los Angeles	23- 4-14	3,780	sd. sh. drlg.
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigged up
Hart Pet., No. 1 Neher, Torrance, Los Angeles	23- 4-14	3,800	fish liner
Kerben Oil, No. 2 Empire, Torrance, Los Angeles	23- 4-14	4,985	pump water
Kern Pet., No. 1-A Madden, Torrance, Los Angeles	23- 4-14	4,760	sd. sh. drlg.
Louisiana Oil, No. 2 Lord, Torrance, Los Angeles	23- 4-14	5,143	flow 270 b.d.
Mallon, Felix, No. 2 Martner, Torrance, Los Angeles	23- 4-14	5,021	O.S. drlg.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	9- 4-14	3,595	rigged up
Pettijohn, J. E., No. 1 Marilou, Torrance, L. Angeles	23- 4-14	4,380	sd. sh. drlg.
Paso Oil, No. 1 Lyle, Torrance, Los Angeles	22- 4-14	4,951	sd. sh. drlg.
Plymouth Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,125	sd. sh. drlg.
Moon Oil, No. 1 Beaver, Torrance, Los Angeles	23- 4-14	5,083	pump 55 b.d.
Russell, T., No. 2 Clarke, Torrance, Los Angeles	23- 4-14	5,130	flow 293 b.d.
Standard Oil, No. 1-1 Marble, Torrance, Los Angeles	15- 4-14	4,986	O. S. drlg.
Standard Oil, No. 1-2 Marble, Torrance, Los Angeles	15- 4-14	3,828	will deepen
Standard Oil, No. 2-11 Marble, Torrance, L. Angeles	22- 4-14	4,950	sd. sh. drlg.
Westside Oil, No. 1 Exeter, Torrance, Los Angeles	23- 4-14	3,835	will deepen
Wilson, Ray, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,284	sd. sh. drlg.
Woolner Oil, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	4,573	sd. sh. drlg.
West Basin Oil, No. 1 Eyster, Torrance, L. Angeles	23- 4-14	3,775	cleaning out
C. C. M. O., No. 15, Torrance, Los Angeles	14- 4-14	4,690	sd. sh. drlg.
C. C. M. O., No. 18, Torrance, Los Angeles	14- 4-14	5,010	tested wet

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment
C.&P., cellar and pits
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper
O.W.P.B., old well plugging back
P.B., plugging or plugged back
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, perforated
S.L.M., steel line measurement
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Bush Oil, No. 1 Torino, Harbor City, Los Angeles	25-	4-14	5,950	P.B. 5,224
D. & B. Oil, No. 2 Lomita, Harbor City, L. Angeles	25-	4-14	5,244	sd. sh. drlg.
General Pet., No. 1 Poggi, Harbor City, L. Angeles	25-	4-14	3,836	will deepen
General Pet., No. 12 Poggi, Harbor City, L. Angeles	25-	4-14	5,100	P.B. 5,065
Macrate, A. N., No. 1-1 Kupfer, Harbor City, L. A.	25-	4-14	5,272	pump 120 b.d.
Macrate, A. N., No. 1 Holden, Harbor City, L. Angl.	25-	4-14	5,323	pump 130 b.d.
O'Donnell, J. L., No. 44 Oakley, Harbor City, L. A.	30-	4-13	4,560	sd. sh. drlg.
Richfield Oil, No. 1 Capitol, Harbor City, L. Angeles	30-	4-13	5,301	P. B. 5,230
Sunset Oil, No. 2 Security, Harbor City, Los Angeles	25-	4-14	....	rigging up
Texas Co., No. 2 Oakley, Harbor City, L. Angeles	30-	4-13	5,325	sd. sh. drlg.
West Talc., No. 1 Pierce, Harbor City, L. Angeles	25-	4-14	5,325	pump water
Union Oil, No. 65 Callender, Dominguez, L. Angeles	32-	3-13	6,270	sd. sh. drlg.
Union Oil, No. 49 Hellman, Dominguez, Los Angeles	33-	3-13	8,460	sd. sh. drlg.
Shell Oil, No. 11 Reyes, Dominguez, Los Angeles	33-	3-13	4,426	redrlg. 3,938
Richfield Oil, No. 1 Estate, Dominguez, L. Angeles	2-	4-13	5,798	sd. sh. drlg.
Entrikin, W. E., No. 1-D West, Athens, Los Angeles	7-	3-13	5,140	sd. sh. drlg.
Fairfield, F. E., No. 1 Abel, Rosecrans, Los Angeles	19-	3-13	7,698	O.S. drlg.
O'Donnell, J. L., No. 46 Mail, Rosecrans, L. Angeles	19-	3-13	5,674	sd. sh. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	20-	3-13	7,655	redrlg. 7,012
Barnsdall Oil, No. 10 Rosecrans, Rosecrans, L. Angl.	20-	3-13	8,572	P.B. 8,265
Union Oil, No. 27 Rosecrans, Rosecrans, L. Angeles	19-	3-13	7,177	sd. sh. drlg.
Union Oil, No. 29 Rosecrans, Rosecrans, L. Angeles	19-	3-13	4,165	sd. sh. drlg.
Universal Cons'd., No. 6 Trust, Rosecrans, L. Angl.	18-	3-13	7,575	cleaning out
Republic Pet., No. 1 Trust, Rosecrans, Los Angeles	18-	3-13	7,537	pump 150 b.d.
Superior Oil, No. 12 Maxwell, Rosecrans, L. Angeles	19-	3-13	7,920	deepening
Hydrocarbon Prod. Inc., No. 1 Cole, Rosecrans, L.A.	19-	3-13	5,997	sd. sh. drlg.
Hydrocarbon Prod. Inc., No. 1 Duchess, Rose., L. A.	20-	3-13	2,385	sd. sh. drlg.
Royalty Ser., No. 3 Gordon, Rosecrans, Los Angeles	18-	3-13	2,781	sd. sh. drlg.
West. Gulf Oil, No. 1 Bagg, Rosecrans, Los Angeles	17-	3-13	7,770	sd. sh. drlg.
Barnsdall Oil, No. 4 R.S.F., Newhall, Los Angeles	26-	4-17	7,070	O.S. drlg.
Continental Oil, No. 1 R.S.F., Newhall, Los Angeles	20-	4-17	2,430	sd. sh. drlg.
Newhall Associates, No. 4 Needham, Newhall, L. A.	13-	3-16	3,504	redrlg. 3,254
Mojave Pet., No. 2 Jennings, Newhall, Los Angeles	33-	5-14	200	sd. sh. drlg.
Mangrum & Page, No. 1 Lintz, Newhall, L. Angeles	4-	3-15	100	hd. sd. drlg.
O'Donnell, J. E., No. 1 Hammond, Newhall, L. A.	8-	3-16	4,305	rigging up
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8-	4-17	1,320	sd. sh. drlg.
General Pet., No. 4 Blinn, Wilmington, Los Angeles	35-	4-13	3,197	flow 240 b.d.
General Pet., No. 30 Harbor, Wilmington, L. Angeles	2-	5-13	3,420	O.S. drlg.
General Pet., No. 31 Harbor, Wilmington, L. Anl.	2-	5-13	3,850	O.S. drlg.
Allied Pet., No. 30 Harbor, Wilmington, L. Angeles	35-	4-13	3,495	sd. sh. drlg.
Dunlap, D. D., No. 4-W, Wilmington, Los Angeles	32-	4-13	3,580	flow 142 b.d.
Getty Oil, No. 4-W, Wilmington, Los Angeles	33-	4-13	5,693	sd. sh. drlg.
Hollywood Oil, No. 5 Baxter, Wilmington, L. Angl.	33-	4-13	2,850	sd. sh. drlg.
Master Pet., No. 1 Chuck, Wilmington, Los Angeles	35-	4-13	5,740	O.S. drlg.
Pacific West. Oil, No. 1 Comm., Wilmington, L. A.	33-	4-13	5,690	pump 95 b.d.
Union Pacific R. R., No. 94 Wilmington, L. Angeles	4-	5-13	5,660	sd. sh. drlg.
Union Pacific R. R., No. 95, Wilmington, L. Angeles	4-	5-13	2,297	sd. sh. drlg.
Union Pacific R. R., No. 96, Wilmington, L. Angeles	4-	5-13	....	rigging up
Union Pacific R. R., No. 100, Wilmington, L. Angeles	3-	5-13	3,584	sd. sh. drlg.
Union Pacific R. R., No. 2-EU, Wilmington, L. Angl.	34-	4-13	3,592	flow 240 b.d.
Union Pacific R. R., No. 3-EU, Wilmington, L. Angl.	34-	4-13	2,964	flow 331 b.d.
Universal Cons'd., No. 6 Newport, Wilmington, L. A.	2-	5-13	3,600	sd. sh. drlg.
Grady, R. T., No. 1 Associates, San Pedro, L. Angl.	23-	5-14	440	sd. sh. drlg.
Hogan Pet., No. 2 Burkhard, San Pedro, L. Angeles	6-	5-13	3,299	sd. sh. drlg.
Seacliff Pet., No. 1 Club, Montebello, Los Angeles	3-	2-12	2,152	sd. sh. drlg.
Olympic Refining, No. 1 Smith, Montebello, L. A.	2-	2-12	3,990	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2-	2-12	6,470	deepening
St. Helens Pet., No. 29 Monterey, Montebello, L. A.	2-	2-12	6,580	flow 230 b.d.
Standard Oil, No. 2 Braun, Montebello, L. Angeles	2-	2-12	3,815	deepening
Standard Oil, No. 3 Braun, Montebello, Los Angeles	2-	2-12	6,700	flow 960 b.d.
Union Oil, No. 1 Calkins, Montebello, Los Angeles	2-	2-12	4,860	sd. sh. drlg.
Union Oil, No. 4 Howard & Smith, Montebello, L. A.	2-	2-12	3,259	sd. sh. drlg.
Pongratz Pet., No. 1 Martin, Montebello, L. Angeles	2-	2-12	6,700	recmtd. 6,636
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2-	2-12	6,694	flow 2,080 b.d.
Mont. Res. Oil, No. 1 M.L.&W., Montebello, L. A.	2-	2-12	6,715	flow 1,640 b.d.
Mont. Wesco, Inc., No. 1 Mont., Montebello, L. A.	2-	2-12	6,618	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, L. Angeles	2-	2-12	6,705	completing
Texas Co., No. 6 Baldwin, Santa Fe Springs, L. A.	6-	3-11	4,430	sd. sh. drlg.
Caminol Co., Ltd., No. 2-10, North Long Beach, L. A.	13-	4-13	7,537	flow 735 b.d.
Johnston Drlg., No. 36, North Long Beach, L. Angl.	13-	4-13	4,538	sd. sh. drlg.
Massey & Asso., No. 1 Taylor, Long Beach, L. A.	19-	4-12	4,745	sd. sh. drlg.
De Soto Oil, No. 1 Signal, Long Beach, Los Angeles	30-	4-12	10,157	swabbing
Parry & Co., No. 1 Associates, Long Beach, L. Angl.	19-	4-12	3,351	sd. sh. drlg.
Brea Canyon Oil, No. 49 Brea, Brea Canyon, Orange	2-	3-10	2,560	hd. sd. drlg.
Shell Oil, No. 20 Orange, Brea Canyon, Orange	2-	3-10	5,752	sd. sh. drlg.
Battersby, J. M., No. 1 Associates, Carmen, Orange	21-	3-11	8,961	gr. sh. drlg.
Graham-Loftus Oil, No. 2 Perkins, E. Coyote, Orange	13-	3-10	3,386	P.B. 3,360
Bartholomae Oil, No. 7 Sterns, East Coyote, Orange	22-	3-10	4,800	reaming
Shell Oil, No. 1 Dunford, Richfield, Orange	22-	3- 9	1,470	sd. sh. drlg.
Goodrich Oil, No. 1 Paige, Richfield, Orange	22-	3- 9	2,952	sd. sh. drlg.
J. E. F. Oil, No. 1 Bruce, Huntington Beach, Orange	36-	5-11	4,424	completing
Southwest Expl., No. 3 State, Hunt. Beach, Orange	10-	6-11	3,592	sd. sh. drlg.
Southwest Expl., No. 4 State, Hunt. Beach, Orange	10-	6-11	2,786	sd. sh. drlg.
Shell Oil, No. 1 Irvine, Del Mar, Orange	6-	7- 9	2,274	sd. sh. drlg.
A. V. Oil, No. 1 Newport, Costa Mesa, Orange	16-	6-10	4,751	idle
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-	4	806	fish D.P.
Palm City Oil, No. 1 Palm City, San Diego	21-18-	2	181	sd. sh. drlg.

KANSAS

Week Ending December 10 (Descriptions are East unless marked otherwise)

Barton County

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. Drlg. 3,397 ft.

Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lansing 3,100 ft.; drlg. 3,295 ft.

I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. Drlg. 2,100 ft.

Newton & Clyde Pulse No. 1 Hagen, SW Sec. 20-20-11w. T.D. 3,330 ft.; 1,250 ft. O.I.H., 40 grav.

Sinclair-Prairie No. 1 Prusa, SE SE SE Sec. 20-16-11w. Arb. 3,335-52 ft.; swb. est. 55 B.O.P.H.

Virginia Drlg. Co. No. 1 Clawson, SW NW Sec. 17-20-11w. Lans. 3,054 ft.; cg. 3,182-3,200 ft.

Cowley County

Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Rng. csg. 3,248 ft.

Dickinson County

Franks et al No. 1 Huffman, NW SW Sec. 11-13-1. Rng. 8-in. 1,400 ft.

Ellis County

C. L. Carlock No. 1 Philip, SE SW NE Sec. 10-15-17w. Drlg. 320 ft.

Cities Service No. 1 Hall "D," C NW Sec. 2-12-17w. Arb. 3,593 ft.; rng. csg. 3,600 ft.

Darby Pet. No. 1 Peavey, NW NE Sec. 24-11-18w. T.D. 3,439 ft.; acd., perf. and swb. 12 B.O.P.H.

Graham County

Continental Oil Co. No. 1 Putnam Inv. Co., CWL SW Sec. 3-9-21w. W.O.C. 1,506 ft.

Greenwood County

Russell B. Reed No. 1 Shell, NW SE Sec. 17-28-11e. T.D. 1,210 ft.; P. 10 B. O.P.D.

Harvey County

Derby Oil and Gary Drlg. Co. No. 1 Jones, CEL NE NW Sec. 7-22-1w. T. D. 3,546 ft.; P.B. 3,300 ft.; drld. to 3,192 ft.; 1,400 ft. O.I.H.; P. 85 B.O. in 8 hrs.; grav. 39; comp.

Lanahan Drlg. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE Sec. 10-27-10w. T.D. 4,529 ft.; P.B. 4,086 ft.; acd. and p. 30 B.O. and 20 B.W. in 12 hrs.

Duwe & Farris No. 1 Kimminan, NE NW SW Sec. 12-30-9w. Drlg. 3,940 ft.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. U.R. 2,984 ft.

Western Kans. O. & R. Co. No. 1 Union, NW NE SW Sec. 18-17-1w. T.D. 2,689 ft.; P. 139 B.O. in 8 hrs.; pot. 419 B. O.P.D.; grav. 35; comp.

Marion County

Cox & McGinnis and Saco Oil Co. No. 1 Jolliffe, C S½ SW SE Sec. 2-22-5. Drlg. 2,240 ft.

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,300 ft.; S.D.

Mead County

Cragin, Reeuscher & Turner No. 1 Adams, NW NW SE Sec. 22-34-30w. T.D. 200 ft.; abd.

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Ness County

C. L. Carlock and F. P. Cullum No. 1 Smith, C SW SE Sec. 11-17-25w. S.O. 4,365 ft.; Viola 4,670 ft.; Arb. 4,780 ft., T.D.; D.&A.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. H.F.W.; U.R. 2,930 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Rice County

Cities Service No. 1 DeWitt, CSL NE Sec. 33-19-9w. Drlg. 1,531 ft.

Cities Service No. 1 Murphy, CWL NE Sec. 9-19-9w. Drlg. 2,016 ft.

Garden Prod. L. Werner, NE NE NE Sec. 10-21-9w. Cg. 3,023-33 ft.

Spurrier & Bruce No. 1 Cary, NE NW NW Sec. 30-18-8w. O.W.D.D.; O.T.D. 1,530 ft.; S.D. 1,680 ft.

J. H. Tatlock No. 1 L. C. Proffitt, SW SE SW Sec. 12-20-10w. Drlg. 2,850 ft.

J. H. Tatlock No. 1 R. P. Proffitt, SW NE Sec. 23-20-10w. K.C. 3,350 ft.; Arb. 3,407-18 ft., T.D.; D.&A.

Rooks County

Phillips Pet. Co. No. 1 Tanzey, C NW SW Sec. 25-8-18w. Arb. 3,418-3,423 ft., T.D. 3,424 ft.; acd. and swb. 21 B.F.

Producers No. 1 Ham (O.W.D.D.), SW NW Sec. 25-7-19w. O.T.D. 1,800 ft.; S.D. 2,702 ft.

Russell County

K. F. Nelson No. 1 Polcyn, SW Sec. 31-13-15w. U.R. 2,855 ft.

Phil-Han No. 1 Weimeister, SW Sec. 18-14-13w. Top pay 2,655 ft.; shot at 2,650-78 ft.

W. I. Southern No. 1 Sellens, SW cor Sec. 22-15-13w. Arb. 3,352-54 ft.; shot 3,188-96 ft.; acd. and P. 25 B.O. and 15 B.W.P.D.

Yankey & Stearnes No. 1 Krog, NW SE NW Sec. 7-15-13w. Top pay 3,324-27 ft., T.D.; to P.B.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Drlg. 1,100 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. U.R. 2,356 ft.

Stafford County

Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. Drlg. 3,575 ft.

Earl Henderson No. 1 King, NE NE NE Sec. 22-31-4. Drlg. 1,775 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 300 ft.

Woodson County

M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

OKLAHOMA

Week Ending December 10

NORTHERN OKLAHOMA

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. T.D. 2,556 ft.; S.D.O.

Cleveland County

Big Chief and Gulf No. 1 Stratiger, NW NW SW Sec. 25-9-2w. T.D. 7,179 ft.; abd.

Burke-Greis No. 1 Alberts, SE SW NW Sec. 19-7-1w. Drlg. 910 ft.

Harper, Turner et al No. 1 Taylor, SE NE NW Sec. 23-8-2w. Drlg. 4,965 ft.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,661 ft.; to swb.

Coal County

Patsy Oil Co. No. 1 Spence, NW SE SE Sec. 19-2-8 S.S.O. 4,169-74 ft.; S.D.O. 4,204 ft.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; 1st Wilcox 6,658 ft.; dry; 2nd Wlx. 6,690 ft.; F. 219 B.O. and 267 B.W. in 24 hrs.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; drlg. sh. 5,840 ft.

L. W. Wrinkler No. 1 Chapman, SE SE NE Sec. 23-4-6w. Drlg. 300 ft.

Greer County

S. T. Moore No. 1 Graumann, NE NW NW Sec. 11-5-21w. T.D. 550 ft.; S.D.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE Sec. 13-7-8. S.D. at 1,200 ft.

Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. S.D. 3,098 ft.

Phillips Pet. Co. No. 1 Mandler, SE SW SW Sec. 1-6-10. Drlg. 5,220 ft.

Jackson County

Lippert No. 1 Howard, NE SW NW Sec. 10-3-19w. O.W.D.D. T.D. 1,510 ft.; S.D.

Kay County

Crawford No. 1 Boehl, SE SE NW Sec 34-27-2w. S.D. 1,000 ft.

Tide Water Oil Co. No. 1 Hockman, NW NW NE Sec. 19-28-1. Wlx. 3,288 ft.; Arb. 3,421 ft.; P.B. to 3,322 ft.; rec. S.W. and P.B. to 2,222 ft.; perf. at 2,298 ft.; no shows; D.&A.

Kingfisher County

Burton Pet. Corp. No. 1 Zerger, C SE SW Sec. 5-18-6w. S.D. at 3,510 ft.; lost cones.

Kiowa County

Crawford & Zelliff No. 1 Kimray, SW SW NW Sec. 36-5-18w. S.D. 354 ft.

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. Drlg. 510 ft.

Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Muskogee County

Heydrick No. 1 Paschall, NE SE NW Sec. 22-13-19. Drlg. 1,430 ft.

Noble County

H. R. Hollenbach No. 1 Mathews, C SW NW Sec. 9-20-1. Viola 5,130 ft.; Wlx. 5,213 ft.; T.D. 5,233 ft.; D.&A.

Phillips Pet. Co. No. 1-A Robertson, NW NE SW Sec. 29-24-1w. Drlg. 4,556 ft.

Okfuskee County

Lease Inv. Co. No. 1 fee, SE SW SE Sec. 21-13-10. T.D. 3,615 ft.; P.B. 3,612 ft.; P. 80 B.O. and 24 B.W. in 24 hrs.; 38 grav.

Mead Prod. Co. No. 1 Pine, SW SW NW Sec. 14-12-11. Drlg. 2,848 ft.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. S.D.; wtr. 150 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Set 10-in. at 1,115 ft.; S.D.

Payne County

Starr O. & G. Co. No. 1 Georgia, SE SW NE Sec. 35-18-4. Drlg. 1,400 ft.

Roy Starr No. 1 McKenzie, SW SW NE Sec. 13-18-3. Bart. 3,607 ft.; cg. 3,660 ft.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW Sec. 4-2-15. T.D. 1,040 ft.; S.D.

Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. T.D. 1,300 ft.; M.I. rotary.

Pontotoc County

J. L. Casey No. 1 Pace, SW SW NE Sec. 14-2-7. S.D. 399 ft.; repairs.

Jack Lynch et al No. 1-A Parker, SW SW SE Sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rip in csg.; P.B. 4,090 ft.; abd.

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. Drlg. 4,000 ft.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. 1st Wlx. 4,385 ft.; 2nd 4,460 ft.; T.D. 4,476 ft.; P.B. 4,388 ft.; P. 6 B.O. in 24 hrs.; S.D.O.

Seminole County

Lesslie Rogers No. 1 Kidd, NE SW SE Sec. 33-10-8. T.D. 200 ft.; S.D.
W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. Drlg. 250 ft.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. S.D. 100 ft.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.
Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 10,145 ft.
L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,186 ft.; S.D.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec 35-3s-1e. Drlg. sh. 3,365 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. sdy. L. 1,300 ft.

Cotton County

Jim Turner No. 5 Collins, C NE NE Sec. 18-4s-10w. S.S.O. 1,237 ft., sd.; T.D.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. T.D. 2,380 ft.; recvd. D.P. and S.D.

ARKANSAS

Calhoun County

Samuel S. Alexander No. 1 Smythe, C NE NE Sec. 7-11-14. Sd., hd. sh.&sd. 3,406 ft.; D.&A.; hd. gr. sd. 3,406 ft.
E. E. Murdock No. 1 Southern Arart Corp., SE cor. NW NW sec. 17-14-13. Top Nac. 2,372 ft.; top Tokio 2,920 ft. S.D. 3,291 ft.

Columbia County

Atlantic Ref. Co. No. 1 Barnette, C SW SE Sec. 14-17-20. 10¾-in. csg. 2,250 ft.; W.O.C.
Normandie Oil Corp. No. 1 L. Garrett, C NE NE Sec. 23-17-20. 9⅝-in. csg. 2,-230 ft.; W.O.C. 2,240 ft.
Pet. Finance Co. No. 1 Barnett, C NW SE Sec. 14-17-20. 16-in. 135 ft.; drlg. rd. sdy. sh. 6,230 ft.
Pet. Finance Co. No. 1 Garrett, C SW SW Sec. 13-17-20. M.I. rig.
Southwood Oil Co., Inc., No. 1 L. Garrett, C SW SW Sec. 13-17-20. Drlg. rd. sdy. sh. 6,249 ft.
Standard Oil Co. of La. No. 1 E. D. Harris, NW cor. NW SE Sec. 15-7-19. T. lime 7,366 ft.; set 6-in. csg. 7,436 ft.; T.D. 7,442 ft.; ran tbg. 7,436 ft.; washed well with wtr.; flwd. into tnks. 223 bbls. in 21 hrs. through 5/32-in. ck., 3% B.S.; C.P. 2,650 lbs.; T.P. 2,100 lbs.; comp.
Standard Oil Co. of La. No. 4 McKean, SW cor. NW SW Sec. 8-16-22. T. Buckner 6,947 ft.; T. P. 7,207 ft.; cd. soft sat. L. 7,217-27 ft.; 6-in. csg. 6,212 ft.; rng. tbg.; to drill plug.; T.D. 7,255 ft.
Standard Oil Co. of La. No. 1 Minnie Harris, NE cor. NE SW Sec. 15-17-19. Drk.
Tide Water Seaboard No. 1 Beene, C SE NW Sec. 15-18-19. Top Cotton Valley 5,887 ft.; cd. 7,000-08 ft.; rec. 4 ft. sd. &sh.; stain oil; cd. 7,020-32 ft.; rec. 1 ft. wtr. sd. and 6 jts. gr. sd.&sh.; no show; cd. S.O. 7,305-10 ft.; cd. 7,997-8,005 ft.; rd. sd.&sh.; cd. T. por. L. 8,201 ft.; B. por. L. 8,226 ft.; cd. to 8,327 ft. and drilled to 8,332 ft.; arng. set 7-in. csg.; T.D. 8,312 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; W.O.C. 63 ft.

Lafayette County

Shell Pet. Corp. & Ohio Oil Co. No. 1 Warren, C SE SE Sec. 13-16-24. 13⅜-in. 194 ft.; 9⅝-in. 2,272 ft.; W.O.C.
Wadley-Erwin et al No. 1 G. W. Taylor, C NE SW Sec. 15-19-26. 13⅜-in. csg. 447 ft.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.
C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cg. anhy. 1,057 ft.
Harford Oil Corp. No. 1 Pinning, C NE NE SW Sec. 6-13-30. S.D.; W.O. 1,-825 ft.
Joe G. Strahan et al No. 2 Dierks Lbr. Co., Sec. 21-12-28. Took core and S.D. 3,364 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson Townsite, Sec. 18-4n-9w. Set 4½-in. csg. on pkr. 1,540 ft.; S.D. 2,406 ft.
J. W. Eddington No. 1 Anderson. S.D. 900 ft.
Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. D.S. stuck 236 ft.

Miller County—Rodessa

Gerhig Co. No. 2 Watson, SE cor. N SE Sec. 2-20-28. R.U.
Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 29-15-15. R.U.
Lyons & Merritt Oil Co. No. 1 E. B. Mitchell, SE cor. NE SW Sec. 2-20-28. Drlg. ch. rk. 2,465 ft.
F. W. Martin Drlg. Co. No. 1 Bloomburg State Bnk., C SE NE Sec. 2-20-28. Set 9⅝-in. csg.; W.O.C. 980 ft.
F. W. Martin Drlg. Co. No. 3 Watts, C S NW NW Sec. 1-20-28. R.U.
Mrs. S. O. Thompson No. 1 Gen. Am. Life Ins. Co., SE cor. SE SW Sec. 20-14-26. Cd. 3,657 ft.; slightly por. sdy. L.; D.S. stk.; T.D. 3,825 ft.; D.S.T. 3,-677-95 ft.; tstd. 15 thribbles S.W.; 8 min.; S.D.; W.O.; 3,851 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n-12e. Top Nac. 2,160 ft.; set 7-in. csg. 2,897 ft.; drlg. hd. gr. L. 3,494 ft.

Nevada County

Texas Canadian Oil Corp. No. 2 Stocks, NW SW SE Sec. 9-15-22. Cor. T.D. 1,-395 ft.; 7-in. 1,340 ft.; perf. csg. 1,395 ft.; recmtd. csg. and ripped csg. 1,209-15 ft.; W.O.S.R.; 250 ft. O.I.H.; T. Nac. 1,202 ft.
Texas Canadian Oil Co. No. 3 Stocks, C SW NE Sec. 9-15-22. R.U.
O. F. Whittaker No. 1 Edwards, Sec. 3-15-20. Cd. brkn. sd.; S.O. 2,030-2,155 ft. set 6¼-in. csg. 2,030 ft.; W.O.S.R.; 60 ft. F.I.H. 2,155 ft.

Pulaski County

A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW Sec. 2-1s-13e. Drlg. hd. gr. slate 4,014 ft.

Union County—Schuler

Delta Drlg. Co. No. 1 Powledge, SW cor. NW NW Sec. 21-18-17. Top Jones sd. 7,599 ft.; cd. to 7,651 ft. and drld. to 7,686 ft.; 7-in. csg. 7,678 ft.; perf. csg. 7,609-22 ft. and 7,626-31 ft.; no flow; set 2-in. pkr. 7,600 ft.; no flow; S.I. and W.O.; C.P. 1,100 lbs.; T.D. 7,-686 ft.; flw. by heads through csg. and tbg.; no chokes; est. 110 B.P.D.; W.O.
E. M. Jones No. 3-B Murphy Ld. Co., SW cor. SE NE Sec. 13-18-18. Drlg. rd. sdy. sh. 6,797 ft.
Lion Oil Ref. Co. No. 1 Banks, NW cor. SW SE Sec. 12-18-18. Set 10¾-in. csg. 1,920 ft.; top Jones sd. 7,579 ft.; T. L. 7,679 ft.; 7-in. csg. 7,714 ft.; T.D. 7,725 ft.; comp.; 18 B.P.H.; ¼-in. ck.; T.P. 550 lbs.; C.P. 1,150 lbs.; perf. 7,-608-26 ft.
Lion Oil Ref. Co. No. 1 Cecil, SE cor., Lot 6, NW Sec. 7-18-17. 16-in. 125 ft.; T. Jones sd. 7,631 ft.; 7-in. csg. 7,704 ft.; perf. 7,631-49 ft.; comp.; 199 B.P. D.; 6/64-in. ck.; T.P. 700 lbs.; C.P. 1,-300 lbs.; T.D. 7,715 ft.
Lion Oil Ref. Co. No. 3 Dee, SW NW Sec. 17-18-17. Set 10¾-in. csg. 1,884 ft.; cd. T. Jones sd. 7,551 ft.; drlg rd. sdy. sh. 7,602 ft.
Lion Oil Ref. Co. No. 5 Marcus, Sec. 18-18-17. Top Jones 7,511 ft.; cd. top L. 7,607 ft.; T.D. 7,725 ft.; set 7-in. csg. 7,689 ft.; W.O.C.
Lion Oil Ref. Co. No. 6 Marcus, C Lot 3, SW Sec. 18-18-17. Set 16-in. csg. 1,-414 ft.
Lion Oil Ref. Co. No. 6 Marine, NW cor. SW NW Sec. 18-17-17. T. Jones sd. 7,-536 ft.; cd. to 7,588 ft.; T.D. 7,598 ft.
Lion Oil Ref. Co. No. 7 Mayfield, C Lot 2, NW Sec. 18-18-17. Cd. T. L. 7,631 ft.; T.D. 7,658 ft.; rmg.
Lion Oil Ref. Co. No. 4 Nelson, SW cor. Lot 5, SW Sec. 18-18-17. L. 7,672-98 ft.; T.D. 7,720 ft.; 7-in. csg. 7,616 ft.
Lion Oil Ref. Co. No. 3 Sewell, NE cor. Lot 4, NW Sec. 18-18-17. Drlg. 1,807 ft.
Marine Oil Co. No. 3 Calloway, SE cor. S½ Lot 4, NW Sec. 18-18-17. T. L.; cd. 7,635-80 ft.; T. Jones sd. 7,531 ft.; T. D. 7,735 ft.
C. H. Murphy No. 1 fee, SE cor. SW NE Sec. 13-18-18. Cd. top Jones sd. 7,534 ft.; T. L. 7,627 ft.; T.D. 7,695 ft.; 7-in. 7,679 ft.; comp.; 173 B.P.D.; 10/64-in. ck.; T.P. 1,075 lbs.; C.P. 1,100 lbs.; perf. 7,565-95 ft.
C. H. Murphy et al No. 2 fee, NW cor. SW SE Sec. 13-18-18. Drlg. 196 ft.
Phillips Pet. Co. No. 1 Amanda, SE cor. NE SE Sec. 12-18-18. Drlg. 3,700 ft.
Phillips Pet. Co. No. 2 Amanda, NE cor. NE SE Sec. 12-18-18. 10¾-in. csg. 2,-068 ft.
Phillips Pet. Co. No. 2 Brian, C S½ NE SE Sec. 13-18-18. 10¾-in. 2,077 ft.; Drlg. 4,335 ft.
Phillips Pet. Co. No. 3 Brian, NW SE Sec. 13-18-18. 16-in. csg. 191 ft.; drlg. 4,965 ft.
Phillips Pet. Co. No. 1 Edwards, SW NE Sec. 17-18-17. 7-in. csg. 7,704 ft.; perf. 7,628-35 ft.; would not flow and re-perf. 7,626-35 ft.; T.D. 7,740 ft.; re-perf. 7,624-35 ft.; washed and swbd.; would not flow; S.I.; W.O.; C.P. 400 lbs.; installing pneumatic pump.
Phillips Pet. Co. No. 2 El Dorado, NW cor. NW SE Sec. 12-18-18. 10¾-in. csg. 2,104 ft.; drlg. 4,256 ft.
Phillips Pet. Co. No. 2 Miller, C N½ Lot 4, SW Sec. 18-18-17. Drlg. rd.&gr. sh. 5,335 ft.
Phillips Pet. Co. No. 6 Sewell, NE cor. Lot 3, SW Sec. 7-18-18. 10¾-in. 2,071 ft.; drlg. 3,826 ft.
Phillips Pet. Co. No. 7 Sewell, NE cor. Lot 4, SW Sec. 7-18-18. 10¾-in. csg. 2,079 ft.
Phillips Pet. Co. No. 8 Sewell, SE cor. Lot 4, SW Sec. 7-18-18. Drlg. 3,875 ft.
Phillips Pet. Co. No. 1 J. E. Stratford, SW cor. NW NW Sec. 17-18-17. 10¾-in. in. csg. 2,073 ft.; drlg. 4,960 ft.

Union County—Other

E. G. Bradham No. 2 Raulston, SE Sec. 12-17-14. Drlg. 2,000 ft.
Fohs Oil Co. No. 1 Craig, C SE NE Sec. 5-18-14. Top Nac. 2,203 ft.; D.S.T. 20 min.; ⅝-in. cks.; rec. 40 ft. drlg. fluid; set 10¾-in. csg. 2,378 ft.; cd. top Tr. Pk. 3,068 ft.; top Crain sd. 3,158 ft.; T. Bcknr. 6,750 ft.; cd. Smackover L., S.O. 6,849-56 ft.; D.S.T. 6,851-56 ft.; rec. 5,100 ft. fluid, over 50% S.W. and some oil 32-34 grav.; cd. 6,856-73 ft.; rec. 7 ft. 7 in. firm por. sat. oolitic L.; 3 ft. 4 in. fine silty med. por. ool. L., no shows and 2 ft. 4 in. slightly por. oolitic L.; cg. ahead.
Goodwin & Markwick No. 1 Adams, 250 ft. SW cor. SW NW Sec. 7-17-13. R.U.
Hollywood & McFarlane No. 6 Scott-Murphy, NW cor. E½ SE NW Sec. 9-16-15. Cd. T. Meakin sd. 2,336 ft., sdy. sh.; S.O. 2,362 ft.; gr. sdy. sh. 2,-362-71 ft.; 7-in. csg. 2,375 ft.; W.O.C. 2,386 ft.
Lion Oil Ref. Co. No. 9 Hardy-Murphy, NW cor. NE NW Sec. 9-16-15. Cd. sd. S.O. 2,295-2,321 ft.; 7-in. csg. 2,344 ft.; cor. perf. 2,294-2,300 ft.; W.O.S.R. 2,-349 ft.
J. R. Lockhart No. 1-A Raulston, NE cor. SW SE Sec. 12-17-14. D.S.T. 3,-007-37 ft.; ¼-in. B. and ½-in. T cks.; W.P. 100 lbs.; 3 min.; W.P. 210 lbs.; 9 min.; rec. drlg. mud and cut oil; rng. 7-in. csg. 3,037 ft.
Mullins, Brooks et al No. 2 Nash, NE cor. NE SW Sec. 7-17-13. 10-in. 148 ft.
Sam M. Richardson et al No. 1 B. Francis et al, NW cor. NW SW Sec. 7-17-13. Brkn. sd. S.O. 3,037-56 ft.; D.S.T. 3,011-56 ft. 15 min.; ½-in. ck. T. and ¾-in. ck. B.; B.H.P. 700 lbs.; rec. 2,900 ft. oil; drld. to 3,242 ft.; cd. 3,242-67 ft. S.W. sd., small S.O.; 7-in. csg. 3,242 ft.; T.D. 3,269 ft.; comp.; 15 B.P.H., 10% S.W.; ¾-in. ck.; T.P. 740 lbs.; C.P. 990 lbs.; est. 500,000 ft. gas; perf. 3,016-30 ft.
Sloan Wells, Tr., No. 4 G. J. Childs, 150 ft. NW cor. NE SW Sec. 8-16-16. O.W. W.O.; O.T.D. 2,656 ft.; M.I. rig to dpn.

NORTH MISSISSIPPI

Calhoun County

L. C. Lucas No. 1 E. C. Boland, 400 ft. E and 500 ft. S. NW cor. SW Sec. 9-22n-9e. Drlg. 916 ft.
S. & O. Properties, Inc., No. 1 G. C. Cooner, SE NE Sec. 12-24n-8e. S.D. 2,300 ft.

Clarke County

Jeremiah L. Ryan No. 1 Eddins, Sec. 29-2n-14e. S.D. 80 ft.
Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. Drlg. rk. 290 ft.

George County

Cleve Love et al No. 2 J. J. Newman Lbr. Co., C SW Sec. 9-1s-8w. S.D. 7,-038 ft., red beds.

Harrison County

Big Ridge Oil Co. No. 1 Hingin, Sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

G. Jefferys No. 1 Gaddis Farms, Inc., NW cor. SE Sec. 26-7n-4w. S.D. 3,-448 ft.
Cleve Love et al No. 1 S. F. Johnson, NE cor. Sec. 29-6n-1w. S.D. 5,218 ft., sd.; arng. D.D.

Montgomery County

Dr. T. H. Chichester No. 1 Mitchell, Sec. 36-20n-7e. Drk.

Pontotoc County

Waldrop et al No. 1 Bray, Sec. 17-11s-1e. S.D. 310 ft.

Rankin County

Love Pet. Co. No. 3 Gulf State Creosote Co., Sec. 36-5n-2e. Comp.; est. 40,-000,000 ft. gas; T.D. 2,356 ft.
Urban B. Hughes, Tr., No. 1 Love Pet. Co., 330 ft. SE cor. NW NE Sec. 1-5n-1e. Set 8⅝-in. csg. 758 ft.; 5½-in. csg. 2,348 ft.; W.O.C.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor. SW NE Sec. 1-10n-17w. Drlg. sdy. sh. 900 ft.
Goodwill O. & G. Co. No. 1 Berry, Sec. 33-2n-4e. S.D. 2,810 ft.

Yalobusha County

Chas. W. Crader et al No. 1 John Bruce Jane, 990 ft. NE cor. Sec. 24-11s-6w. Drlg. sh. 800 ft.

FLORIDA

Levy County

Florida Oil Discovery No. 2 Cedar Key Co., Sec. 9-15s-13e. S.D. for csg.; T.D. 3,986 ft.

Nassau County

St. Mary Oil Corp. No. 1 Hilliard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; S.D.; fsg. D.S.

Lake County

Union O. & R. Co. No. 1 Gulf Explr., sec. 17-24s-25e. S.D. 235 ft.

Suwanne County

J. W. Phillips Oil Explrn. Co. No. 1 Shilkett, Sec. 14-4s-14e. S.D. 50 ft. for csg.

ALABAMA

Barbour County

H. A. Stebbinger et al No. 1 Mrs. Alyce Robertson, C NE NE Sec. 19-10n-25e R.U.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark.-La. Gas Co. No. 1-B Davis Bros. Lbr. Co., NW SW Sec. 7-16-4. 9⅝-in. csg. 2,557 ft.; D.S.T. 5,845-76 ft.; 50,-000,000 ft. gas; open flow; 10 min.; ¼-in. cks. T.&B.; B.M.A. 5,640 ft.; b. stringer anhy. 5,753 ft.; D.S.T. 6,185-6,203 ft.; tstd. 1,530 ft. S.W. 16 min.; ¼-in. cks. T.&B.; top Pettit L. 6,706 ft.; no por.; top Tr. Pk. 7,047 ft.; gas sd.; cd. 7,171-93 ft.; 5½-in. csg. 7,166 ft.; T.D. 7,201 ft.; perf. 5,973-93 ft. and tstd. S.W.; P.B. 5,950 ft. and perf. 5,-925-40 ft. and tstd. S.W.; P.B. 5,885 ft.; perf. 5,860-80 ft. and comp.; 22,-879,000 ft. gas; R.P. 2,010 lbs.; O.T.D. 7,261 ft.; T.D. 5,885 ft.
Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. Set 13⅜-in. 180 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas. SE cor. Sec. 10-22-11. S.D. T.D., sh. 3,197 ft.
H. M. Harrell et al No. 1 Edwards Est. Unit, Sec. 5-17-11. T. Pettit L. 5,114 ft.; rng. 7-in. csg. 5,196 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE Sec. 28-19-11. T.D. 2,384 ft.; acd. with 1,000 gal.; csg. seat gave away; hole full S.W.; 5½-inch csg., 2,342 ft. pmpg. est. 10 B.P.D. oil and much S.W.
J. B. Stovall et al No. 6 Ark. Fuel fee, SE cor. NE SE Sec. 15-19-11. Drlg. 150 ft.

Caddo Parish

C. L. Ablinger No. 1 Gregory, NE cor. Sec. 3-20-11. 6-in. 960 ft.; W.O.S.R. 971 ft.
C. L. Ablinger No. 2 Gregory, NW cor. NE Sec. 3-20-16. 10-in. 42 ft.; set 6-in. 962 ft.
R. E. Allison No. 3 Ellerbe, NE cor. Sec. 28-18-14. Loc.
R. E. Allison No. 4 Ellerbee, C NW NE Sec. 34-18-14. Set 9⅝-in. csg. 2,034 ft.; drlg. sh.&L. 2,612 ft.
R. E. Allison No. 5 Ellerbee, C NE NE Sec. 34-18-4. 9⅝-in. csg. 2,032 ft.; W. O.C. 2,220 ft.
R. E. Allison No. 1 Jones & Mabry Unit, SE Sec. 21-18-14. Drlg. sh. 5,065 ft.
Ark.-La. Gas Co. No. 1 Webb, C NW SW Sec. 4-16-13. 9⅝-in. csg. 1,236 ft.; T.D. 6,010 ft.; T. Pettit L. 5,616 ft.; D.&A.
Carney et al No. 3 Hart, SE NW Sec. 21-21-16. Drlg. sh. 1,055 ft.
W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Set 6-in. csg. 1,945 ft.; T.D. 1,954 ft.; tstd. S.W. 1,954 ft. and P.B. 1,944 ft.; drld. out to 1,954 ft.; tstd. S.W.; W.O. 1,954 ft.
Colonial Corp. No. 1 Thigpen-Herold, 330 ft. S and W, C Sec. 34-22-16. Cg. 4,840 ft.
Paul Cooper No. 2 Stiles, SW SE Sec. 28-21-16. Set 6-in. csg. 1,542 ft.; used 1,500 gal. acd. and tstd. dry; tstd. S.O. 1,851 ft.; blg. to test 1,977 ft.
R. E. Davidson No. 1 Herold et al, NW cor. SE NW Sec. 10-21-16. Drlg. sh. 906 ft.
J. P. Driscoll et al No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 16-in. csg. 208 ft.
Eagle Prod. Co. No. 1 Means, SE cor. NE Sec. 9-23-15. Drlg. sh.&L. 5,260 ft.
W. C. Feazel et al No. 1 Hughes, 660 ft. SE cor. Sec. 33-18-14. R.U.
Claude Ferguson No. 1 Lawhon, NW cor. Sec. 7-20-15. Drlg. sh. 887 ft.
J. F. Mitchell No. 1-B Muslow, SE NE
G. W. Gibson No. 3 Muslow. NW cor. Sec. 6-20-15. Set 7-in. csg. 1,354 ft. Used 1,500 gal. acd. W.O.S.R. 1,570 ft.
G. W. Gibson No. 4 Muslow, NW cor. Sec. 6-20-15. 10-in. csg. 62 ft.; 7-in. csg. 1,354 ft. W.O.S.R.
Harry Hanbury No. 1 Lowe, et al, SE cor.,

SW Sec. 23-18-14. Drlg. sh.&L. 3,094 ft.

H. C. Prod. Co. No. 1 Kinnebrew & Ratcliff, NE cor. Sec. 5-19-16. Drlg. 390 ft.

C. D. Loe No. 1 Meyer, SE cor. Sec. 33-18-14. Top Pettit 5,592 ft.; T.D. 5,628 ft.; perf. 5,602-25 ft. and tstd. S.W.; P.B. 5,611 ft.; 5½-in. csg. 5,627 ft.; T. D. 5,631 ft.; P.B. 5,583 ft.; drld. out to 5,610 and perf. 5,602-05 and tstd. S.W.; perf. 5,553-57 ft.; tstd. csg. and perf. 5,-592-95 ft. Set tbg. with packer 5,600 ft. tstd. S.W. and S.O. 5,592-98 ft. and re-perf. 5,589-92 ft.; set pkr. 5,587 ft. and tstd. S.W. 5,600 ft.; S.O.; S.D.; W.O.; T.D. 5,598 ft.; O.T.D. 5,631 ft.

McDonald & Campbell No. 2 Burton, NW cor. Sec. 7-20-15. Drlg. sh. 680 ft.

Manziel et al No. 3 Muslow, NW SW Sec. 6-20-15. Comp.; 40 B.P.D.; 5½-in. csg. 1,335 ft.; used 1,500 gal. acd.; T.D. 1,-575 ft.

Manziel et al No. 3 Ramsey, NE SE Sec. 32-21-15. Set 5⅛-in. csg. 1,348 ft.; acd. with 2,000 gal. at 1,590 ft.; W.O.S.R.

J. F. Mitchell No. 1-B Muslow, SE NE Sec. 31-21-15. Losing returns 1,140 ft.

Oils, Inc., No. 1 Cazaux, SW cor. Sec. 10-16-13. O.W.W.O.; O.T.D. 3,500 ft.; D.D.

Rodessa O. & R. Co. No. 2 Chandler, C NW SE Sec. 34-18-14. 13⅜-in. csg. 178 ft.; drlg. sd.&sh. 968 ft.

Harry Smith No. 1 Sproull, SE cor. Sec. 32-20-16. 5-in. csg. 1,411 ft.; tstd. S.W. 1,910 ft.; P.B. 1,650 ft. and swbg. S.W. O.T.D. 1,698 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW Sec. 17-20-15. Pmpd. S.W.; O.T.D. 1,698 ft.
arng. dpn. 1,860 ft.; S.D. 2,150 ft.

Tri-State Prod. Corp. No. 1 Stiles, SE cor. NE Sec. 28-21-16. Set csg. 1,850 ft.; W.O.C.

R. W. Williams No. 1 Ark. Fuel, SE SE Sec. 26-21-16. 5-in. csg. 2,258 ft.; W. O.C.

Caldwell Parish

G. W. Ziegen et al No. 15 Cent. La. Lbr. Co., 1,650 ft. S, 330 ft. E, NW cor. Sec. 32-15-2e. R.U.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. 3,212 ft.

Claiborne Parish

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Hd. to slightly por. L. 5,294-5,303 ft.; 5½-in. csg. 5,287 ft.; used 6,000 gal. acd.; swbg. to test; tstd. S.S.O. 5,324 ft.; split csg. 2,600 ft.; cmtd. csg.; swbd. dry; set tbg. with pkr. and arng. acd. 5,324 ft.

Sinclair Prairie Oil Co. No. 9 Langston SW cor. Sec. 18-21-7. 9⅝-in. csg. 1,-200 ft.; comp.; pmpg. 15 B.P.D. 1,400 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec 12-16. Set 7-in. csg. 2,705 ft.; acd. with 3,000 gal. and tstd. est. 2,000,000 ft. gas; 400 lbs.; gas exhausted; 1,000 ft. O.I.H., 2,761 ft.; did not pmp. at 2,-761 ft.; S.D. W.O. 2,853 ft.

Paul Miller No. 2 Jal Drlg. Co., NE Sec. 5-11-11. Set 7-in. csg. 4,038 ft.; perf. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.; O.T.D. 4,205 ft.; perf. csg. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.

Tippett Oil Corp. No. 1 Williams, S cor. Sec. 31-13-11. Set 7-in. csg. 1,165 ft.; tstd. S.W. 1,410 ft. P.B. 1,335 ft. and acd. 3,000 gal.; tstg. 1,360 ft.

Grant Parish

Long & Porter No. 1 Swope, SE cor NW SE Sec. 18-9-1e. 10-in. csg. 84 f set 6-in. csg. 1,610 ft.; T.D. 1,625 ft.; W.O.S.R.

C. L. Thompson No. 1 McNeely Est., NE cor. Sec. 10-6-3w. D.&A. 4,518 ft.

La Salle Parish

Pet. Heat & Power Co. No. 3 Richardson, SE cor. Sec. 3-9-1e. R.U.

Trichell et al No. 1 Gallagher, NW cor Sec. 31-9-2e. D.&A. 1,751 ft.

G. C. Walsenham No. 1 Dean, NW cor. SE Sec. 23-9-1e. Drlg. 962 ft.

Madison Parish

Continental Oil Co. No. 2 Singer Mfg. Co., C Sec. 2-15n-11e. Set 7⅝-in. csg. 522 ft.; D.&A. 4,486 ft.

Red River Parish

N. W. Hunter No. 1 LeLong, NW cor. NW SE Sec. 33-12-10. 10-in. csg. 40 ft.; D.S.T. 1,671-88 ft.; tstd. 575 ft. S. W. 9 min.; cd. S.W. sd. 2,730-40 ft.; drlg. sh.&sd. 2,751 ft.

Magnolia Pet. Co. No. 59 Pugh, Sec. 12-12-11. 8¼-in. csg. 2,815 ft.; drlg. sh. &L. 6,131 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec 20-13-10. 5⅜-in. csg. 2,510 ft.; D.D. 2,-560 ft.; W.O.S.R.

H. B. Schumacher No. 1 Crichton, SW cor. NW Sec. 18-13-10. R.U.

Sabine Parish

Clyde Creighton No. 1 Bowman Hicks, C NE NW Sec. 3-7-12. 10-in. csg. 60 ft.

Earl F. Fox No. 1 Cook Ld. Co., SW cor. SE NW Sec. 1-9-12; O.W.W.O. O.T.D. 3,655 ft.; arng. dpn. 3,655 ft.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; cond. mud 3,642 ft.; arng. set 7-in. 3,500 ft.; T.D. 3,642 ft.

M. J. Kissick No. 1 J. Newton, NE cor. SE Sec. 1-7-11. 6-in. csg. 2,440 ft.

LeGrande & Brown No. 1 Tatum, NF cor. NW NE Sec. 17-8-13. Tstd. dry 2,-130 ft.; tstd. S.G.; acd. with 1,000 gal.; tstd. dry 2,340 ft.; did not acd.; tstd. S.W.; S.O. 2,340 ft.; 500 ft. O.I.H.; used 3,000 gal. acd.; tstd. S.O. 2,340 ft.; will set short string 4-in. csg. 2,-340 ft.

Major Oil Co. No. 1-C Bowman Hicks Lbr. Co., C SW NW Sec. 34-8-12. Drlg. sh. 2,020 ft.

Major Oil Co. No. 6 Bowman Hicks, C SW SE Sec. 11-7-13. Set 10-in. 82 ft.; set 7-in. csg. 2,196 ft.; T.D. 2,504 ft.; used 2,500 gal. acd.; W.O.S.R.

Morris Co. No. 1-A Ervine & Bishop, C NE SW Sec. 14-7-13. Set 6-in. csg. 2,-177 ft.; used 3,000 gal. acd.; tstd. S.O.; W.O. 2,573 ft.; W.O.S.R.

H. L. Nutting No. 1 Williams, SW cor Sec. 13-7-11. T.D. 3,130 ft.; used 3,000 gal. acd.; swbg. S.W. 2,860 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft P.B. 2,585 ft.; tstd. dry S.D.; W.O. 2,-585 ft.

Sklar & Neighbors No. 1 Martinez, Sec 11-7-13. 6-in. csg. 2,172 ft.; used 3,000 gal. acd.; tstd. S.O. 2,312 ft.; top sd. 2,552 ft.; tstd. S.O. and S.W. 2,554 ft.; P.B. 2,210 ft. tstd. dry; W.O. 2,210 ft.

M. S. Slagle et al No. 1 Chadwick, SW cor. SE NW Sec. 32-8-10. Set 6-in. csg. 2,590 ft.; swbg. S.W.; T.D. 2,649 ft.

C. H. Smith No. 1 Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Set 10-in. csg. 66 ft.

J. L. Spier No. 2 Hale, SW cor. NW SW Sec. 1-7-13. Set 10-in. csg. 44 ft.; 6-in. 2,106 ft.; tstd. S.W.; arng. P.B. 2,560 ft.

Lee Whitehurst No. 2 First Natl. Bnk., C SE NW Sec. 14-7-13. 7-in. csg. 2,212 ft.; tstd. dry 2,301 ft.; used 3,000 gal acd.; tstd.; used 2,000 gal. acd. and comp.; pmpg. 40 B.P.D.; T.D. 2,605 ft.

Swolle Synd. No. 1 Mansfield Lbr. Co., Sec. 8-7-19. T.D. 4,323 ft.; 5-in. csg. 3,830 ft.; drlg. plug 4,323 ft.; 2,500 gal acd.; perf. 3,730-70 ft.; tstd. dry; W.O 3,770 ft.; O.T.D. 4,323 ft.; sqzd. off perf.; set short string 4-in. csg. 3,883 ft. and perf. 3,861-70 ft. and 3,880-83 ft.; O.T.D. 4,323 ft.; tstd. S.W.; S.O.; P.B. 3,700 ft. and perf. 2,120-40 ft. and 2,234-60 ft.; tstd. small S.G. 2,275 ft. and used 2,500 gal. acd.; tstd. dry; W. O. 2,275 ft.

Tensas Parish

H. V. Schumacker No. 4 Mound Plantation, Sec. 29-11-12e. Rmg. to bttm.; T. D. 2,450 ft.; S.D. for D.S.T. 2,450 ft.

Webster Parish

Hunt Oil Co. No. 9 Babb, C N WSE Sec. 14-21-10. Holloway sd. 3,674-95 ft.; set 9⅝-in. csg. 5,657 ft.; comp.; 238 B.P. D.; ¼-in. ck.; T.P. 1,000 lbs.; C.P. 1,-500 lbs.; T.D. 5,950 ft.

Hunt Oil Co. No. 10 Babb, SE cor. Sec. 14-21-10. Drlg. sh.&sd. 5,092 ft.

Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Hollw. sd. 5,595-5,603 ft.; set 9⅝-in. csg.; did not test Hollwy. sd.; top Bodcaw sd. 8,187 ft.; T. Davis sd. 8,457 ft.; 7-in. csg. 8,707 ft.; perf. csg. 8,205-25 ft.; tstg.; T.D. 8,708 ft.

Hunt Oil Co. No. 10 Davis, C SE SE Sec. 13-21-10. Hollwy. sd. 5,674-78 ft. and 5,719-27 ft.; 9⅝-in. csg. 5,660 ft.; tstd. small S.O. 6,038 ft.; Bod. sd. 8,-288-8,333 ft.; rng. 7-in. csg.; T.D. 8,392 ft.

Hunt Oil Co. No. 23 Hope, C NW NW Sec. 13-21-10. Drlg. 2,737 ft.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Hollwy. sd.; top "D" sd. 8,534 ft.; S.O. 8,534-50 ft.; "D" sd. 8,537-68 ft.; Bodcaw sd. 8,628-68 ft.; set 7-in. csg. 8,715 ft.; perf. csg. 8,540-65 ft. and tstd. S.W.; will sqz. and re-test; T.D. 8,600 ft.; O.T.D. 8,720 ft.; P. B. 8,558 ft. and cmt.; did not hold; perf. 8,533-38 ft. and tstd. S.W.; S.O.; T.D. 8,558 ft.; drlg. out cmt. 8,516 ft.

Hunt Oil Co. and Stanolind O. & G. Co. No. 1 Coffee-Webster Inv. Co. Unit, C NE NW Sec. 36-31-10. R.U.

Magnolia Pet. Co. No. 4 Branton, NE cor. Sec. 6-22-9. 9⅝-in. csg. 5,933 ft.; drlg. rd. bds. 6,335 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝ in. csg. 5,920 ft.; top lower Marine 7,998 ft.; 8,505-10 ft. strks. hd. sd., O. &G. odor; cd. 8,537-39 ft.; 2-ft. sd. gas odor; drlg. hd. sd. 9,917 ft.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. Set 13⅜-in. csg. 887 ft.; W.O.C.

North American Oil Consol. Co. No. 4 Stewart-Coyle, C NW SE Sec. 29-21-10. Drlg. sh.&L. 6,225 ft.

Ohio Oil Co. No. 5 Bodcaw, Acct. 5, Sec. 13-21-10. No Holloway sd.; 9⅝-in. csg. 5,640 ft.; drlg. L.&sh. 6,532 ft.

Ohio Oil Co. No. 51 Bodcaw Acct. 2, NE cor. Sec. 15-21-10. Drlg. sdy. sh. 8,425 ft.

Ohio Oil Co. No. 8 B. Sydney Hrs., SW cor. Sec. 16-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,670 ft.; drlg. sdy. sh. 7,627 ft.

Oliphant Oil Corp. No. 1 Gray & Stephens, C SE SW Sec. 35-21-10. Top Tr. Pk. 5,882 ft.; Hollwy. sd. 5,975-88 ft.; 9⅝-in. csg. 5,595 ft.; drlg. sdy. sh. 7,178 ft.

Oliphant Oil Corp. No. 1-A Hodges, C NW NE Sec. 3-20-10. Drlg. 3,030 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,615 ft.; top "D" sd. 8,594 ft., S.W.; T. Bodcaw 8,684 ft.; 7-in. csg. 8,672 ft.; tstd. S.O.&G. and S.W. 8,692 ft.; arng. D.S.T. 8,697 ft.

Stanolind O. & G. Co. and W. Delaney No. 1 Pardee-Coffee Unit, C NE Sec. 36-21-10. T. Tr. Pk. 5,932 ft.; no Holloway sd.; set 9⅝-in. csg. 5,955 ft.; drlg. 6,034 ft.

Stanolind O. & G. Co. and Hunt Oil Co. No. 1 Pardee-Coffee Unit, C NE NE Sec. 36-21-10. Top Tr. Pk. 5,897 ft.; no Hollwy.; 9⅝-in. csg. 5,944 ft.; drlg. sh. 8,196 ft.

Stanolind O. & G. Co. No. 1 Webster Inv. Co., C NE NE Sec. 35-21-10. 13⅜-in. csg. 737 ft.; no Hollwy. sd.; top Tr. Pk. 5,680 ft.; 9⅝-in. csg. 5,997 ft.; T. "D" sd. 8,172 ft.; T. Bodw. sd. 8,-263 ft.; 7-in. csg.; T.D. 8,316 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. 13⅜-in. csg. 1,413 ft.; drlg. sh.&L. 4,623 ft.

Woodley Pet. Co. No. 1 J. O. Couch, C NW SW Sec. 36-21-10. Drlg. r.b. 7,-022 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Bancroft—Beauregard Parish

Geo. E. Lilly et al No. 1 W. K. Rice, Sec 15-6s-13w. T. gas sd. 7,185 ft.; T. oil sd. 7,326 ft.; T.D. 7,338 ft.; 7-in. csg. 7,326 ft.

Republic Prod. Co. No. 2 Columbia Ld. & Tmbr. Co., Sec. 16-6s-13w. T.D. 3,-400 ft.; P.B.; sdtrkd.; T.D. 7,360 ft.; 7-in. csg. 7,352 ft. (cor.); perf. csg. 7,-294-99 ft.; trying to sdtrk.

Republic Prod. Co. No. 3 Columbia Ld. & Tbr. Co., Sec. 16-16s-13w. Top sd. 7,238 ft.; T.D. 7,292 ft.; D.S.T. 7,285-92 ft.; rec. 750 ft. oil; 7-in. csg. 7,287 ft.; I.P. 130 B.P.D.; ½-in. ck.

Republic Prod. Co. No. 3 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. S.D. 805 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. Loc.

Texas Co. No. 1 Wax Bayou, Sec. 21-16s-12e. T.D. 11,185 ft.; 7⅝-in. csg. 11,126 ft.; P.B. 10,925 ft.; perf. csg. 10,907-20 ft.; tstd. oil and S.W.; set retainer at 10,895 ft.; perf. csg. 10,907-12 ft.; rec. 6,615 ft. of oil and S.W.; P.B. 10,810 ft.; perf. csg. 10,778-803 ft.; tstd. dry gas. drld. out to 10,650 ft.; perf. csg. 10,-630-45 ft.; D.S.T. failed; perf. csg. 10,-470-90 ft.; tstd. dry gas; sqzd. perf.; W.O.C.

Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 3 Duplantier, Sec. 65-7s-1w. T.D. 6,820 ft.; P.B. 6,788 ft.; perf. csg. 6,775-78 ft.; flwd. oil and S.W.; cut. window in csg. 6,775-78 ft.; ran lnr.; perf. csg. 6,470-82 ft.; I.P. 350 B.P.D.; ⅞-in. ck.

Wm. Helis et al No. 4 Duplantier, Sec. 65-7s-1w. R.U.

Wm. Helis No. 2 Harry Nolson, Sec. 36-7s-1w. Drlg. sd. 2,428 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 3 Schwing Lbr. Co., Sec. 66-9s-11e. Drlg. 217 ft.

Humble O. & R. Co. No. 10 Wilberts, Sec. 66-9s-11e. T.D. 5,890 ft., salt; abd.

Bayou Boullion—St. Mary Parish

Transcontinental Oil Co. No. 5 State, Sec. 13-9s-9e. Drlg. sdy. sh. 1,275 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader No. 4 Schwing, Sec. 29-8s-11e. Drlg. sh.&L. 7,924 ft.

La. Crusader No. 5 Schwing, Sec. 29-8s-11e. 9⅝-in. csg. 2,250 ft.; T.D. 4,755 ft.; P.B. 4,200 ft.; to sdtrk.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 3 St. Charles Ld. Co., Sec. 13-15s-20e. Dredge canal.

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Loc.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; T.D. 5,466 ft.; rmg. to drill ahead.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 3 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,275 ft.; 7-in. csg. 7,275 ft.

Sun Oil Co. No. 4 Dibert Stark and Brown Cypress Co., Sec. 70-15s-15e. Drk.

Charenton—St. Mary Parish

Edwards & Aber No. 2 Blanchard, Sec. 21-13s-9e. T.D. 1,148 ft.; 5½-in. csg. 1,141 ft.; tstd. S.W.; P.B. 1,132 ft.; perf. csg. 1,125-32 ft.; W.O.S.R.

Edwards & Aber No. 1 Lebland, Sec. 21-13s-9e. Top sd. 1,119 ft.; T.D. 1,123 ft.; W.O.S.R.

Kinsley Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 5 Robichaux, Sec. 25-13s-9e. T.D. 2,454 ft.; 7-in. csg. 2,449 ft.; I.P. 29 bbls. first 2 hrs.; ¾-in. ck.

Peterson Pet. Corp. No. 1 Green Est., Sec. 27-13s-9e. T.D. 50 ft.; R.U. heavy rig.

J. P. Scranton et al No. 1 State, Twp. 13s-9e. Drlg. sh. 2,952 ft.

St. Mary Oil Co. No. 1 Robichaux, Sec. 21-13s-9e. T.D. 1,830 ft.; 7-in. csg. 1,-830 ft.; perf. csg. 1,800-05 ft. and 1,-795-1,800 ft.; tstd. S.W.; sqzd. off perf.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16. 13⅜-in. csg. 1,-492 ft.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico, T.D. 5,249 ft.; P. B.; sdtrkd.; T.D. 2,983 ft.; sdtrkd. 1,-298 ft.; top sd. 5,247 ft.; T. D. 5,267 ft.; 7-in. csg. 5,244 ft.; I.P. 387 bbls. 34.4-grav. oil; 12/64-in. ck.

Darrow—Ascension Parish

Humble O. & R. Co. No. 19 Community, Sec. 31-10s-2e. T.D. 7,280 ft., salt; P.B 4,596 ft.; 7-in. csg. 7,716 ft.; T.D. 7,-832 ft.; perf. csg. 6,700-05 ft.; made sqze. job; W.O.C.

Humble O. & R. Co. No. 4 Landry, Sec. 34-10s-2e. R.U.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s 2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 22 State, Sec. 5-22s-16e. 13⅜-in. csg. 2,030 ft.; T.D. 6,027 ft.; P.B.; sdtrkd.; drlg. sh. 5,650 ft.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. T.D. 2,862 ft.; drill stem stuck.

Union Sulphur Co. No. 1 Ld. Sulphur Mining Co., Sec. 33-9s-11w. T.D. 6,981 ft.; abd.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Drlg. sh. 8,765 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 6-B Realty Operators, Sec. 17-17s-15e. T.D. 9,501 ft.; 7-in. csg. 9,487 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 30 State, Sec. 38-23s-33e T.D. 6,943 ft.; sdtrkd.; drlg. sh. 6,768 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 Erwin, Sec. 14-9s-8w. T.D. 7,053 ft.; 7-in. csg. 7,051 ft.; perf. csg. 7,026-32 ft.; tstd. gas-cut mud; perf. csg. 6,942-52 ft.; tstd. gas-cut mud and dist.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 1 State-QQ, Sec. 6 20s-19e. 13⅜-in. csg. 1,498 ft.; shaly sd. S.O. 6,053-86 ft.; rec. 1,830 ft. mud &S.W.; D.S.T. 6,582-6,612 ft.; drlg. sh. 7,112 ft.; D.S.T. 6,662-77 ft.; rec. 270 ft. oil.

Hackberry—Cameron Parish

L. W. Capps et al No. 1 Duhon, Sec. 27-12s-10w. S.D. 3,424 ft.

Stanolind O. & G. Co. No. 2 Kaugh, Sec. 28-12s-10w. T.D. 3,050 ft.; P.B.; sdtrk.; T.D. 3,040 ft.; pmpg. 58 B.F.P.D., 30% S.W.

Superior Oil Co. No. 5 Benson Vincent, Sec. 30-12s-10w. Drlg. sd.&sh. 3,137 ft.

Texas Co. No. 16-B State-Hackberry, Twp. 12s-9w. Drlg. sh.&L. 5,664 ft.

Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft.; 7-in. csg. 8,050 ft.; perf. csg. 7,903-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf. csg. 7,763-74 ft.; W.O.S.R.

Union Sulphur Co. No. 7 Caldwell et al, Sec. 37-12s-10w. Drlg. sh. 5,988 ft.

Union Sulphur Co. No. 11 Doiron, Sec. 37-12s-10w. Drlg. sh.&L. 4,430 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e. T.D. 11,644 ft.; 9⅝-in. csg. 11,631 ft.; drlg. sh. 12,065 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Adeline Sugar Co., Sec. 39-13s-9e. Drlg. sh. 1,853 ft.

Herton Oil Co. No. 9 Carter, Sec. 38-13s-9e. Drlg. sd.&sh. 8,897 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 2 Jefferson Island, Sec. 58-12-5e. 18⅝-in. csg. 40 ft.; drlg. sdy. L. 1,965 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,-732 ft.; trying to drill by fish; P.B. 6,104 ft.; W.O.C.

A. W. Forrester No. 1 Jules Clement, Sec. 46-9s-2w. T.D. 2,890 ft.; fsg.

Glassell & Glassell No. 4 McFarlain, Sec. 41-9s-2w. Drlg. sd. 5,757 ft.

Glassell & Glassell No. 7 Trushel, Sec. 42-9s-2w. Drlg. sd.&sh. 5,103 ft.

Guaranty Oil Co. No. 2 Houssere-Latrielle, Sec. 47-9s-2w. T.D. 1,840 ft.; W. O.S.R.

Gulf Oil Corp No. 40 Arnaudet, sec 49s-2w. T.D. 6,871 ft.; 7-in. csg. 6,852 ft. I.P. 482 B.P.D.; ⅛-in. ck.

Gulf Ref. Co. No. 1 Lamb, Sec. 45-9s-2w. T.D. 5,742 ft.; rmg.

Iles Pet. Co. No. 3 Jennings, Sec. 41-9s-2w. T.D. 2,174 ft.; 6⅝-in. csg. 2,124 ft. I.P. 125 B.P.D.; pmpg.

Jolly Pet. Co. No. 2 Crusel, Sec. 41-9s-2w. 16-in. csg. 84 ft.; drlg. sh.&L. 4,-694 ft.

Jolly Pet. Co. No. 3 McFarlain, Sec. 41-9s-2w. Drlg. sdy. sh. 4,500 ft.

L. & L. Oil Co. No. 4 Houssiere Latreille, Sec. 47-9s-2w. T.D. 1,825 ft.; 7-in. csg. 1,817 ft.; T.D. 1,881 ft.; treating hole with acd.

Ladak Oil Co. No. 8 Jenning Clement, Sec. 46-9s-2w. T.D. 1,735 ft.; 6-in. csg. 1,705 ft.; tstd. S.W.; pull screen.

O'Mera et al No. 2 McFarlain, Sec. 41-9s-2w. T.D. 1,625 ft.; 10¾-in. csg. 1,-628 ft.; drlg. L. 6,482 ft.

Shell Pet. Corp. No. 5 Community, Sec. 40-9s-2w. Drlg. sdy. sh. 7,102 ft.
Stanolind O. & G. Co. No. 113 Crowley & Mineral Co., Sec. 48-9s-2w. T.D. 6,256 ft.; 8⅝-in. csg. 1,556 ft.
Superior Oil Co. No. 9 Jennings-Haywood. Sec. 41-9s-2w. T.D. 6,633 ft.; 7-in. csg. 6,413 ft.; perf. lnr. 7,276-7,354 ft.; tstd. S.W.
Superior Oil Co. No. 15 Leckelt, Sec 42-9s-2w. T.D. 8,744 ft.; 5½-in. liner 8,739 ft.
Superior Oil Co. No. 16 Wm. Leckelt, Sec. 42-9s-2w. Loc.
Three Sands Oil Co. No. 2 Clement, Se 46-9s-2w. 6-in. csg. 1,700 ft.; S.D. 2,600 ft.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien Adams, Sec. 9-17s-24e. T.D. 10,212 ft.; abd.
Texas Co. No. 4 Madison Realty Co., 17s-24e. Drlg. sdy. sh. 9,068 ft.
Texas Co. No. 1 Sch. Bd., Sec. 16-17s-24e. 13⅜-in. csg. 2,030 ft.; drlg. sh.& L. 10,022 ft.

Lake Palto—Terrebonne Parish

Texas Co. No. 22 State. Sec. 8-23s-18e. T.D. 6,027 ft.; reaming.

Leesville—La Fourche Parish

Texas Co. No. 7 Leeville, sec. 27-21-22e. T.D. 8,667 ft.; D.S. stk.; sdtrkd.; T.D. 8,436 ft.; sdtrkd.; T.D. 8,685 ft.; stk. 9⅝-in. csg. at 8,577 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Laterre, Inc., Sec. 31-19s-19e. 13⅜-in. csg. 3,174 ft.; cg. sh.&sd. 8,876 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 6 State-Lake Long Twp. 17s-19e. 10¾-in. csg. 3,066 ft.; cd. oil sd. 9,365-69 ft.; T.D. 9,482 ft.; 7-in. csg. 9,481 ft.; perf. csg. 9,340-60 ft.; flwd. 84 B.O.P.D.; ¾-in. ck.; T.P. 3,000 lbs.; C.P. 2,800 lbs.; killed to rework; perf. csg. 9,356-62 ft.; I.P. 242 B.P.D.; 12/64-in. ck.
Fohs Oil Co. No. 7 State-Lake Long Twp. 17s-19e. T.D. 295 ft.; 18⅝-in. csg. 295 ft.; W.O.C.

New Iberia—Iberia Parish

H. Fotiades No. 7 Gulf Ld., Sec. 25-12s-7e. Drlg.
Wm. Helis No. 5 Schwing, Sec. 56-12s-7e. T.D. 4,954 ft.; P.B. 4,188 ft.
Texas Co. No. 2 Bryant, Sec. 25-12s-7e R.U.
Texas Co. No. 5 Bryant, Sec. 25-12s-7e T.D. 6,627 ft. salt; top salt 6,612 ft.; 7-in. csg. 6,608 ft.; perf. csg. 6,460-82 ft.; I.P. 415 B.P.D.; ¾-in. ck.
Texas Co. No. 1 Gonsoulin, Sec. 13-12s-7e. Drlg. L. 9,177 ft.
Texas Co. No. 1 Renaudet et al, Sec. 71-12s-7e. Drlg. sh. 1,260 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 5 Federal Ld. Bnk., Sec. 33-8s-1e. T.D. 7,196 ft.; top sd. 7,179 ft.; rmg.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 2 Klumpp, Sec. 12-7s-2w. Cd. gas sd. 7,943-63 ft.; T.D. 8,655 ft.; 7-in. csg. 8,654 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nezal. Drk.
Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 37 Orleans Lv Bd., Sec. 23-18s-15e. T.D. 3,138 ft.; rng. 13⅜-in. csg. 3,061 ft.; drlg. sd. 5,030 ft.
Western Gulf Prod. Co. No. 1 Pascale, Sec. 6-18s-27e. Loc.
Western Gulf Prod. Co. No. 1 Sam Treadway, Sec. 6-18s-27e. T.D. 2,952 ft.; abd.
Western Gulf Prod. Co. No. 1-A Treadway, Sec. 6-18s-27e. Loc.; (cor.).

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 2-A Orleans Levee Bd., Sec. 7-19s-17e. Loc.
Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.
Gulf Ref. Co. No. 6 State, Sec. 17-19s-17e. T.D. 5,900 ft.; 9⅝-in. csg. 5,880 ft.; drlg. sdy. sh. 7,650 ft.
Gulf Oil Ref. Co. No. 7 State, Sec. 18-19s-17e. Drlg. sh.&L. 4,183 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; T.A.

Sorrento—Ascension Parish

Sorrento Pet. Corp. No. 2 White, Sec 22-10s-4e. 10¾-in. csg. 1,940 ft.; drlg. sh. 6,702 ft.

South Roanoke—Jeff Davis Parish

Union Sulphur Co. No. 2 T. R. S. Farms Sec. 23-10s-4w. T.D. 10,954 ft.; (cor.). sdtrk. 9,075 ft.; drilled to 9,266 ft.; stuck D.S.; P.B. 8,860 ft.; sdtrkd.; drlg. sh. &L. 9,911 ft.

Gueydan—Acadia Parish

A. M. Barbe No. 1 G. L. Humble, Sec. 27-11s-1w. Drlg. sh.&sd. 4,229 ft.
Burton-Sutton Oil Co. No. 1 Valerean Simon, Sec. 37-11s-1w. Drlg. sd. 7,840 ft.

Starks—Calcasieu Parish

J. R. Turnbull et al No. 5 Industrial Lbr Co., Sec. 30-9s-12w. Top salt 2,053 ft.; S.D., T.D. 2,058 ft.

Sweet Lake—Cameron Parish

Pure Oil Co. No. 1 Stanolind O. & G. Co. fee lse., Sec. 12-13s-8w. Drk.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft.; salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. 3,504 lbs. press.; reset screen; would not flow; reset screen; bailed dry; P.B. 5,345 ft.; perf. csg. 5,330-40 ft.; swbd. dry; S.D.

Valentine—La Fourche Parish

Wm. Helis et al No. 4 Valentine Sugars Inc., Sec. 2-17s-20e. T.D. 7,567 ft.; P.B. 6,765 ft.; drld. out to 6,790 ft.; tstd. oil and S.W. 6,726-95 ft.; P.B. 4,750 ft. sdtrkd. 4,550 ft.; drlg. sh.&L. 5,397 ft.
Pan American Prod. Co. No. 2-A Community, Sec. 58-17s-20e. Drlg. sh. 9,163 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 9 Manhattan Land & Fruit Co., Sec. 26-21s-30e. T.D. 3,669 ft.; run 10¾-in. csg.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Phillip Fontenot, Sec. 44-3s-2e. T.D. 9,092 ft.; W. O.C.
Continental Oil Co. No. 2 Ludeau-Haas. Sec. 44-3s-2e. T.D. 9,046 ft.; top sd. 9,013 ft.
Continental Oil Co. No. 3 Piere McDaniel, Sec. 44-3s-2e. R.U.R.
Continental Oil Co. No. 2 Martha Haas. Sec. 44-3s-2e. R.U.
Continental Oil Co. No. 2 N. H. Hirsch, Sec. 44-3s-2e. Drk.
Continental Oil Co. No. 2 Petre, Sec. 44-3s-2e. Drk.
Continental Oil Co. No. 2 Tate-McDaniel Sec. 44-3s-2e. T.D. 9,027 ft. oil sd.; I.P. 334 B.P.D.; ¼-in. ck.
Texas Co. No. 2 fee, Sec. 27-3s-2e. R.U.

Vinton—Calcasieu Parish

J. M. Donald et al No. 1 Gordon, Benchenstein-Flynn, Sec. 34-10s-12w. T.D. 1,000 ft.; W.O.C.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Adam Comier, Sec. 5-12s-2w. Drlg. sh. 1,702 ft.

West Lake Verret—St. Martin Parish

Shell Pet. Corp. No. 2 Jeanerette, Sec. 14-14s-12e. Loc.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Races, Sec. 12-9s-6w. T.D. 8,914 ft., sh.; run electrical survey.
Union Sulphur Co. No. 1 A. H. Thomas, Sec. 12-9s-6w. Drlg. sh.&L. 3,960 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farewell Co., Inc., Sec. 79-14s-14e. T.D. 3,071 ft.; 13⅜-in. csg. 2,978 ft.

Avoyelles Parish

Sid Richardson No. 1 Haas Inv. Co., Sec. 7-28s-3e. Drlg. sh. 2,200 ft.

Calcasieu Parish

Humble O. & R. Co. No. 1 Desire-Miller, Sec. 32-11s-6w. Drlg. sh. 8,312 ft.
Humble O. & R. Co. No. 1 S. A. Knapp, Sec. 20-10s-8w. Drlg. sh. 1,255 ft.
David B. MacDaniel No. 2 Sch. Ld., Sec 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; drlg. sh. 4,310 ft.

Cameron Parish

Federal Royalty Co. No. 2 State-Calcasieu Lake, Twp. 13s-9w. R.U.
Pure Oil Co. No. 3 Calcasieu Natl. Bnk., Sec. 19-12s-4w. T.D. 8,051 ft.; abd.
Superior Oil Co. No. 1 John Pradia, Sec. 4-15s-8w. (Core test); drk.

Iberville Parish

California Co. No. 1 Schwing Lbr. Co., Sec. 96-10s-10e. Canal completed.
Humble O. & R. Co. No. 1-B A. Wilberts Sons Lbr. Co., Sec. 78-8s-8e. Dredge canal.
Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e. Loc.

La Fourche Parish

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. Loc.
Texas Co. No. 1 La Terre, Sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft.; T.D. 11,135 ft.; 2,500 ft. 6⅝-in. csg. 11,135 ft.; perf. csg. 9,975-10,005 ft.; tstd. 21 stnds. dist.; P.B. 8,600 ft.; drlg. out cmt. to 9,316 ft.; perf. csg. 9,265-90 ft.; tstd. S.W.; made sqz. job; reperf. csg. 9,230-57 ft.; make D.S.T.; perf csg. 8,850-70 ft.; rec. 71 stands of S.W. and 3 stands of mud and oil; sqzd. perf.; W.O.C.; perf. csg. 8,500-20 ft.; I.P. 828 bbls. 37.4-grav. oil per day; ¼-in. ck.
Texas Co. No. 1 State-Catfish Lake, Sec 77-19s-21e. 18⅝-in. csg. 90 ft.; drlg. sh. 6,770 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. T.D. 9,410 ft.; cmtd. leak in surf. csg.
W. T. Burton No. 1-B R. E. de Montluzin, Sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,165 ft.; 9⅝-in. csg. 8,165 ft.; T.D. 8,241 ft.; tstd. S.W.; D.S.T. 8,135-8,241 ft.; drlg. sd. 9,676 ft.

Plaquemines Parish

Texas Co. No. 1 L.L.&E. Bastian Bay, Sec. 43-20s-28e. R.U.

St. Bernard Parish

Gulf Ref. Co. No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. Drlg. sdy. sh. 7,847 ft.
Wm. Helis et al No. 1 Mereaux Munez, Sec. 34-12s-12e. Drlg. sh. 4,151 ft.
Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 59-13s-14e. R.U.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. Drlg. hd. sd. 2,470 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec 38-12s-15e. Drlg. sh. 5,638 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Hazel Burdin. Sec. 15-14s-12e. T.D. 9,833 ft.; sd. S.O.; D.S.T. 9,823-33 ft.; recovered S.W.; P.B. 8,049 ft.; perf. csg. 8,017-20 ft.; flwd. 273 B.O.; ¼-in. ck.; not clear of wash wtr.
Texas Co. No. 6 State Lake Mongoulois. Sec. 10-10s-9e. T.D. 9,858 ft.; 7⅝-in. csg. 9,839 ft.; top salt 10,388 ft.; T.D. 10,403 ft.; P.B. 9,540 ft.
Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,175 ft.; drld. out to bttm.; P.B. 8,080 ft.; perf. csg. 8,060-70 ft.; tstd. mud, gas and S.W.; sqzd. off perf.; perf. csg. 8,060-65 ft.; tested 38 stands oil and gas showing fresh wtr.; set screen and lnr.; washed well; no flow; W.O.

St. Mary Parish

St. Mary Oil Co. No. 2 L. Herbert, Sec. 31-13s-9e. T.D. 6,952 ft.; stk. D.S.; P. B. 6,764 ft.; W.O.C.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, sec. 33-7s-15e. Drk.

Terrebonne Parish

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; T.D. 10,039 ft.; P.B. 9,852 ft.; sdtrk. 9,984 ft.; T.D. 10,075 ft.; 9⅝-in. csg. 10,061 ft.; drlg. sh. 10,760 ft.
Texas Co. No. 2 State-Coon Point, Twp 23s-14e. 13⅜-in. csg. 1,900 ft.; T.D. 2,851 ft.; S.D. for repairs.

Seabreeze—Chambers County

Sun Oil Co. No. 5 Acom, H.T.&B. Sur. No. 103, 10¾-in. csg. 1,945 ft.
Sun Oil Co. No. 1 Tate, H.T.&B.R.R. Sur. T.D. 8,634 ft.; P.B. 2,000 ft. to sdtrkd. at 2,609 ft.; T.D. 8,581 ft.; 7 in. csg. 8,581 ft.; P.B. 8,465 ft.; perf. csg. 8,576-81 ft.; swbg.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay) 10¾-in. csg. 1,212 ft.; T.D. 8,530 ft.; run csg.

Hitchcock—Galveston County

Maco Stewart No. 10 fee, J. Spillman Sur. Drlg. sh. 4,312 ft.

League City—Galveston County

Mid-States Oil Co. No. 1-A, Maco Stewart, Perry & Austin Sur. Cg. sh. 9,239 ft.
George Echols No. 1 Maco Stewart-Ross, Lot 3, Perry & Austin Sur. T.D. 9,119 ft.; perf. csg. 9,059-92 ft.; flwg. oil and wash wtr.
George Echols No. 1 Maco Stewart, Perry & Austin Sur. Spd.
Phillips Pet. Co. No. 1 Dr. Patton, S. F. Austin Sur. Spd.
Phillips Pet. Co. No. 1 Stewart, Title Guaranty, S. F. Austin Sur. Loc.
West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No. 1 C. Ehrkardt, H. Simmons Sur. R.U.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.

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McGREGOR
WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

TEXAS

Week Ending December 10

GULF COAST FIELDS

Hastings Field—Brazoria County

Humble O. & R. Co. No. 3-C Cecil Brown, W. H. Snyder Sur. T.D. 6,080 ft.; W. O.C.
Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.
Stanolind O. & G. Co. No. 9 Surface, A. C.H.&B. Sur. T.D. 5,272 ft.; P.B. 2,575 ft.; sdtrkd.; drlg. sh.&L. 3,722 ft.

Old Ocean—Brazoria County

Commerce Oil Co. No. 1 S. M. Patterson, Polly & Chance Sur. 9⅝-in. csg. 7,000 ft.; drlg. 7,210 ft.
Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. S.D. 8,878 ft.
Harris & Abercrombie No. 4 Armstrong, Polly & Chance Sur. Drlg. sh.&L. 8,791 ft.
Harrison & Abercrombie No. 3 Chenault, C. Breen Sur. R.U.
Harrison & Abercrombie No. 1 R. D McDonald, C. Breen Sur. Cg. sdy. sh. 10,050 ft.
Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. Drlg. sh. 7,267 ft.

Sandy Point—Brazoria County

Stanolind O. & G. Co. No. 1 Sharp, C. S. Corbett Sur. No. 12. T.D. 8,943 ft.; abd.

West Columbia—Brazoria County

Mike Hogg No. 5 fee, M. Varner Sur. Drlg. sh. 3,639 ft.
Texas Co. No. 89 Hogg, G. Tenille Sur. R.U.

Cedar Point—Chambers County

Standard Oil Co. of Texas et al No. 4-118 State. Drlg. sh. 2,412 ft.

Eureka—Harris County

Jack Frazier No. 1 Emma Helberg. J Reinerman Sur. Drlg. sdy. sh. 5,810 ft.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Tide Water Asso. Oil Co. No. 1 M. A. Roy, J. Reinerman Sur. T.D. 7,648 ft.; cd. gas sd. 7,609-29 ft.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Ariola, G. Williams Sur. 9⅝-in. csg. 1,217 ft.; drlg. sh. 5,736 ft.
Amerada-Stanolind O. & G. Co. No. 2 Foley, W. K. Hamblin Sur. T.D. 6,849 ft.; 5½-in. csg. 6,848 ft.
Amerada-Stanolind O. & G. Co. No. 2 Peters, W. K. Hamblin Sur. and Hogan Sur. T.D. 7,920 ft.; 5½-in. csg. 7,548 ft.; perf. csg. 6,963 ft.; tstd. S.W.; reperf. csg. 6,964-68 ft.; tstg.
Amerada-Stanolind O. & G. Co. No. 1 G. W. Stinson Sur. Cg. sh. 6,846 ft.
E. M. Hailey No. 1 Albert Brown, J Clarkson Sur. Loc.
Housh-Thompson No. 1 Yerkes, Sam Lewis Sur. Loc.
Sinclair Prairie Oil Co. No. 2 Goodykoontz, Wiley S. Powell Sur. R.U.
Windsor Oil Co. No. 1-A C. D. Ley, G. Ayers Sur. T.D. 6,846 ft.; W.O.C.

Friendswood—Harris County

Humble O. & R. Co. No. 1 J. L. Jones Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 19 Gray, Perry & Austin Sur. T.D. 6,037 ft.; W.O.C.
Humble O. & R. Co. No. 1 G. C. Ruby, T. Choate Sur. Drlg. sh. 1,510 ft.
Humble O. & R. Co. No. 3 Settegast, T Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson Drk.
Humble O. & R. Co. No. 5 West Prod., T. Choate Sur. T.D. 6,042 ft.; W.O.C.

Cordele—Jackson County

Lewis Prod Co. No. 2 Drushel. I.&G.N Sur. No. 10. T.D. 2,716 ft.; 5½-in. csg. 2,688 ft.
H. J. Porter No. 1 Woussi. Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 1 McFaddin, S. A. Pace Sur. Bldg. drk.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B Blackman Lge. T.D. 8,675 ft.; 7-in csg. 8,605 ft.; pmpg. wtr. into hole to kill press. in No. 3 Broussard; made sqz. job; dpnd. 8,680 ft.; fsg. for D.P milling out of csg. 8,466-70 ft.; T.D. 8,795 ft.; D.S. stk.

Hardin—Liberty County

Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.
Humble O. & R. Co. No. 8 Partlow, H. B. Johnston Sur. Drlg. sh. 4,905 ft.
Shell Pet. Corp. No. 1-B West, A. B. Hardin Sur. Cg. 7,596 ft.
Woodley Pet. Co. No. 1 Humphries, F. Hardin Sur. T.D. 7,676 ft.; 5½-in. csg. 7,624 ft.

Orange—Orange County

Orange Pet. Corp. No. 1 Chesson, Wm. Dyson Sur. R.U.
John G. Mayo No. 1 Seales, Wm. Dyson Sur. 10¾-in. csg. 1,000 ft.; T.D. 6,179 ft.; swabbing.
Red Bank Oil Co. No. 1 First Natl. Bank Wm. Dyson Sur. Perf. csg. 5,625-29 ft.; tstg.
Union Prod. Co. No. 1 Lutcher Moore Lbr. Co., J. Dyson Sur. 10¾-in. csg. 1,000 ft.; T.D. 5,846 ft.; 5½-in. csg. 5,846 ft.

Segno—Polk County

Gulf Oil Corp. No. 5 Ragan, I.&G.N. Sur No. 15. Loc.
Humble O. & R. Co. No. 10-B Kirby Lbr. Co., M. Victor Sur. Drlg. 439 ft.
Providence Oil Co. No. 1 Wing, I.&G.N Sur. No. 14. T.D. 8,158 ft.; W.O.C.

Spurger—Tyler County

Republic Prod. Co. No. 14 Hurd, N. Hurd Sur. Drlg. sh. 5,336 ft.

GULF COAST WILDCATS

Austin County

Crown Cent. Pet. Corp. et al No. 1 Huebner, Renkestolz Sur. Loc.

Brazos County

N. W. Hunter No. 1 Jerichew, E. M. Millican Sur. Spd.

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Gray, Wolfe and Mayo No. 1 Joe D. Hughes, F. B. Drake Sur. S.D. 2,710 ft.
Humble O. & R. Co. No. 1 Masters-Geo. Robinson Sur. 13⅜-inch csg. 2,402 ft.; T.D. 8,860 ft.; rmg.
David B. MacDaniel No. 1 J. E. Rawald, Mary V. O'Donnell Sur. T.D. 6,500 ft.; abd.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D Smith Sur. Loc.
Moore & Ahern No. 1 E. Maley, Ben Winfree Sur. Loc.

Colorado County

Coyle & Concord No. 4-B Powell, I.&G. N. Sur. No. 45. R.U.

Harris County

C. L. Dobbins et al No. 1 Ridgeview Farms, D. Steele Sur. 10¾-in. csg. 840 ft.; cg. sh. 6,136 ft.
Jack Frazier et al No. 1 W. T. Carter Talcott Patching Sur. Drlg. sh. 4,062 ft.
Jack Frazier et al No. 1 Griffith, Adams Smith Sur. T.D. 8,348 ft.; P.B. 4,088 ft.; 5½-in. csg. 4,090 ft.; perf. csg. 4,073-77 ft.; started showing S.W.; went dead; reperf. csg. 4,070-77 ft.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.
Smith & McDannald No. 1 F. Molk, John Gay Sur. 10-in. csg. 1,080 ft.; T.D. 7,971 ft.; abd.

Jackson County

Chapman Minerals Corp. No. 1 Bennett rnh., Valentine Garcia Sur. Drlg. sdy. sh. 5,893 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 2 Jefferson Ld. Co., C. Hillebrandt Sur. Drlg. sh.&L. 6,752 ft.
Humble O. & R. Co. No. 13-B McFaddin-State, Sec. 8. 10¾-in. csg. 2,758 ft.; T.D. 4,557 ft.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.
Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. R.U.

Montgomery County

Housh & Thompson No. 1 E. B. Clary, Wm. S. Allen Sur. T.D. 4,739 ft.; 7-in. csg. 4,736 ft.; flwg. dry gas, volume test through ⅝-in. ck. 3,420,000 ft.
H. A. Pennington et al No. 1 F. L. Banker, L. M. H. Washington Sur. Drlg. 1,012 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. T.D. 7,867 ft.; P.B.; sdtrkd.; T.D. 8,945 ft.; well attempted to blow out; run electrical survey.

S. W. TEXAS WILDCATS

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. T.D. 1,722 ft.; perf. csg. 1,650-75 ft.; S.D.

Bastrop County

Ira Brown No. 1 T. W. Bailey, John Crutchfield Sur. No. 12. Spd.
R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 2,150 ft.
Marts & Beaven No. 1 Doherty, John Maxmillian Sur. R.U.
Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. D.S.T. 7,088-23 ft.; recvd. 1 thrib. of mud; S. S.O.; 4¾-in. csg. 7,152 ft.; swbg. salty sulfur wtr.; T.D. 7,175 ft. (cor.); P.B. to 7,150 ft.; drlg. plug; tstd. sulfur wtr.; P.B. into csg. to perf. csg. 7,023-30 ft.; swbg. salty sulf. wtr. 7,165 ft.; abd.

Bee County

Bunn-Texas Co. No. 2 Sparkman, Asa Walker Sur. T.D. 4,105 ft.; abd.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,160 ft.

Bexar County

H. G. Krumm No. 1 Kempf, Samuel McCollough, Jr., Sur. No. 54. S.D. 350 ft.
L. G. Priest et al No. 1 E. B. McCollough, Stephen Jett Sur. T.D. 1,004 ft.; will test on pmp.
Charles Schreiner No. 1 McCloskey, L. Desague Sur. No. 134. T.D. 1,100 ft.; run lnr.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; S.D. 501 ft.
E. L. Nixon No. 2 Crist, John McClenechen Sur. No. 94. Drlg. 137 ft.

Brooks County

Humble O. & R. Co. No. 1 McGill Bros., Ygnacios Rivas, La Blanca gr. Drlg. 2,000 ft.

Caldwell County

Lincoln Pet. Co. No. 1 Sarah McBane, Francis Berry Sur. T.D. 1,984 ft.; abd.

Calhoun County

S. T. Dudley et al No. 1 Becker, L. L. Joseph Sur. Drlg. sh. 516 ft.
Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. T.D. 10,015 ft.; P.B. 8,550 ft.
Joe Wagner et al No. 1 Florence Lamm, Manuel De Luna Sur. No. 3. R.U.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

Harry Fansler No. 1 Benavides, El Mesquite gr. Drlg. sh. 3,015 ft.
Magnolia Pet. Co. No. 1 Duval Co. Rch. Co., G.C.&S.F.R.R. Sur. No. 189. Tstd. S.W. in Cole sd.; drlg. 1,126 ft.
J. J. O'Hern No. 1 S. Benavides, G.C.& S.F.R.R. Sur. No. 169. 10-in. csg. 42 ft.; drlg. 2,906 ft.
S. K. & C. et al No. 2 Welder, Nathaniel Tinsley Sur. 10-in. csg. 19 ft.; T.D. 3,072 ft.; S.D.
S.K.&C. et al No. 3 Welder, Nathaniel Tinsley Sur. Loc.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 2 Houston, Conrad Die Sur. No. 161. Drlg. sh. 1,382 ft.
Geo. Smith No. 1 Berry, T.C.R.R. Sur. No. 1. T.A.C. 4,445 ft.; T. Edws. L. 5,097 ft.; T.D. 5,163 ft.; D.S.T. 5,133-63 ft.; tstd. blk. sulf. wtr.; S.D.

Goliad County

J. D. Brock et al No. 1 Dial, Pedro Trevino Sur. Drlg. sh. 4,537 ft.
Steinberge Pet. Corp. No. 1 Albrecht. T. Hancock Sur. T.D. 5,313 ft.; 5½-in. csg. 5,313 ft.; perf. csg. 5,238-44 ft.; flwg. est. 4 B.F.P.H.; ¼-in. ck.; 75% 44-grav. oil, bal. wash wtr.

Gonzales County

Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 500 ft.
John Hueners et al No. 1 Bauer, R. E. Brown Sur. S.D. 1,017 ft.

Guadalupe County

Catherine Brown No. 1 Davis, L. A. Patillo Sur. T.D. 2,039 ft.; abd.
Frank Glenn No. 1 Appling, Harriet Cottle Sur. No. 14. Drlg. 1,835 ft.
R. Hamil et al No. 1 E. Zuehl, Vicente Duran Sur. No. 4. 10-in. csg. 21 ft.; S.D. 635 ft.
Joseph Holefield No. 1 Claud Brodnax, John King Sur. Spudded and S.D.
A. D. King No. 1-A Rosenbrock, Vincente Duran Sur. No. 4. T.D. 1,882 ft.; Buda L.; 6-in. csg. 991 ft.; swbg. and flwg. 3 B.O.P.H.; started showing S.W.; cmtd. off bttm. of hole; swbg.
E. H. Robertson No. 1 Alex Forshage, Eligio Gortari Sur. No. 16. Drlg. limestone 2,190 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. T.D. 1,483 ft. (cor.); 4½-in. csg. 1,468 ft.; abd.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car. Hidalgo Co. Canal Subd., Lot 8, Blk. 8. T.D. 7,509 ft.; perf. csg. 7,440-65 ft.; tstd. 500,000 ft. gas, 9 bbls. dist.; W.P. 1,700 lbs.; killed well; reperf. csg. 6,918-30 ft.; tstd. dist.; reperf. csg. 6,515-25 ft.; flwd. dist.; will perf. csg. higher.
Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). Cmtd. 7⅝-in. csg. 5,847 ft. (protection string); T.D. 9,708 ft.; P.B. 5,940 ft.; perf. csg. 5,840-5,900 ft.; I.P. 50 bbls. dist., 2,260,000 ft. gas per day; ¼-in. ck.
Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5½-in. lnr. set 8,369-9,618 ft.; tstd. S.W. 9,420-30 ft.; made sqze. job; P.B. 9,390 ft.; perf. csg. 9,372-80 ft.; swbd. S.W. and gas; perf. csg. 9,347-52 ft.; tstd. S.W.; perf. csg. 9,255-60 ft.; tstd. S. W.; perf. csg. 9,065-70 ft.; tstd. S.W.; perf. csg. 8,990-9,000 ft.; tstd. S.W.; perf. csg. 8,920-25 ft.; tstd. S.W.; perf. csg. 8,845-50 ft.; flwd. 24 bbls., 51-grav. dist. per day; ⅝-in. ck.; killed to reperf.; sqz. off perf.; prep. to test 8,500-10 ft.; tstd. gas and S.W.; sqzd. perf. csg. 8,480-90 ft.; tstd. gas and S.W.; sqzd. reperf. csg. 8,075-80 ft., tstd. 450 bbls. fluid, 45 bbls. 22.7 grav. oil; sqzd. off perf.; perf. csg. 7,920-25 ft.; perf. csg. 7,430-40 ft.; tstg.

Jim Hogg County

Humble O. & R. Co. No. 4 Bass, San Rafel Flores. R.U.
Humble O. & R. Co. No. 3 Anna Kelsey Bass, San Raphel gr., 3,732 ft. N of Kelsey field discovery well. Recvd. 500 ft. of oil; 25 lbs. press.; D.S.T. 4,700-56 ft.; T.D. 5,380 ft.; 7-in. csg. 5,146 ft.; perf. csg. 4,730-35 ft.; flowed oil and S.W.; sqzd. off perf.; reperf. csg. 4,728-35 ft.; I.P. 155 B.P.D.; ⅛-in. ck.
Johnson & Robinson No. 1 Palacios, Mary Montgomery Sur. Drlg. 490 ft.
Navarro Oil Co. No. 1 Guerra, Santa Teresa gr. (7,000 ft. SW discovery. Kelsey field). 10¾-in. csg. 1,231 ft.; drlg. sh. 4,100 ft.

Jim Wells County

Tom Graham et al No. 1 Chas. Hirsch. Jacob Stanfert Sur. T.D. 5,760 ft.; run csg.
Magnolia Pet. Co. No. 1 Samuel Maun, Los Olmos y Loma Blanca gr. Drlg. sh. 4,765 ft.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,332 ft.; 7-in. csg. 7,332 ft.; perf. csg. 7,327-30 ft.; cg. shaly sd. 7,743 ft.

Karnes County

M. W. Brown et al No. 1 Yanta, S. G. Hardaway Sur. S.D. 2,778 ft.
Formax Oil Co. No. 1 Pflugger, Erasmus Seguin Sur. S.D. 1,969 ft.
Suttle et al No. 1 McKinney, Luz Navarette Sur. Loc.

Kendall County

Carpenter No. 1 Seidensticker, A. Rodriquez Sur. No. 257. S.D. 518 ft.
C. M. Dewey No. 1 Seidensticker, J. M. Cherino Sur. No. 18. S.D. 545 ft.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. T.D. 985 ft.; fsg.

Kerr County

J. O. Hart et al No. 5-E Jeff Love, J. Martinez Sur. O.W.D.D. Drlg. L. 5,673 ft.
H. C. Starkey No. 1-A Saue, T.W.N.G R.R. Sur. S.D. 100 ft.

Kimble County

Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. S.D. 1,140 ft.
Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. 5½-in. csg. 1,765 ft.; drlg. 1,986 ft.

Kinney County

Bob Rose No. 2 Gaebler, Dolores Soto de Beales gr. S.D. 225 ft.
C. B. Wardlaw No. 1 Standart, Meliton Valdez gr. S.D. 1,340 ft.

La Salle County

Lake-Tobian Oil Co. No. 1 O'Connor ranch. Blk 35, Bland & Nelson subd. S.D. 3,462 ft.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). Spd. and S.D.

Lee County

Fred Pederson et al No. 1 Brown. David Hudson Sur. Cd. L., oil odor, 6,100-12 ft.; swbg. S.W. and oil.

Live Oak County

Brown and Dovre No. 1 Mary F. Hewitt, Thos. Adams Sur. R.U.
R. H. Feltner No. 1 Reed, I.&G.N. R.R Sur. 15. R.U.

McMullen County

Loma Oil Co. No. 1 Edrington A. B. & M. Sur. No. 79. Location.
Scarborough & Biglane No. 1 Matula Emmitt, Jas. Garner Sur. No. 6. T.D. 880 ft.; C.O.

Maverick County

Rio Dev. Co. No. 5 State Bnk. & Trst. Co., G.C.&S.F.R.R. Co. Sur. No. 1. T.D. 71 ft.; T.A.
Wellington Oil Co. of Delaware and Humble O. & R. Co. No. 2 Indio Cattle Co. Antonio Rivas Grant. Cuevas Pasture No. 2. Drlg. sh. 1,607 ft.

Medina County

C. H. Gannon et al No. 1 Saathoff, G. L. Hemeken Sur. No. 833. T.D. 1,303 ft.; abd.
Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. T.D. 81 ft.

Milam County

McGuyer and McCormick No. 1 Jacob, Jose Leal Sur. Drlg. sh. 200 ft.

Nueces County

L. A. Douglas No. 1 L. E. Smith, C.E.I.P.& M. Sur. No. 459. Drlg. 2,600 ft.
Humble O. & R. Co. No. 1 Michalek, Lots 4 and 5, Sec. 97, Bishop Out Lot subd. Drlg. sh. 7,089 ft.
Renwar Oil Co. et al No. 1 Eschberger, Nueces River Irrg. Park subd. Drk.
Stanolind O. & G. Co. No. 1 Geo. R. Clark, Nueces Co. Winter Vegetable Gardens. T.D. 7,015 ft.; well attempted to blow out.
Texas Co. No. 1 E. Little et al, Wm. Little Sur. 10¾-in. csg. 1,174 ft.; T.D. 7,746 ft.; fsg.; P.B. to sdtrk.; drlg. sh. 7,125 ft.
Trinity Drillers, Inc., No. 1 L. E. Smith, C.E.P.I.&M. Sur., Sec. 6, Blk. "C." Drlg. sdy. sh. 2,225 ft.
Union Prod. Co. No. 1 Minnie Brown (Agua Dulce area). Drlg. sh. 13,140 ft.

Real County

Blakely Smith et al No. 1 Love Ranch. H.E.&W.T.R.R. Co. Sur. Drlg. 495 ft. no report.

Refugio County

G. S. I. et al No. 1 Michna, Aldrete 6¼ Lge. Recovered oil; D.S.T. 6,315-29 ft. T.D. 6,357 ft.; perf. csg. 6,330-35 ft.; tstg.; I.P. 155 B.P.D.; ⅛-in. ck.
G. S. I. et al No. 4 Rooke, Aldrete 6¼ Lge. T.D. 5,920 ft.; 7-in. csg. 5,907½ ft.
Hewitt & Daugherty No. 1 Rooke, Aldrete Sur., Sec. 6. T.D. 5,903 ft.; perf. csg. 5,893-5,900 ft.; I.P. 155 B.P.D.; 5/32-in. ck.
Phillips Pet. Co. et al No. 1 Emilie Pavelecк, Aldrete 6¼ Lge. R.U.
Rutherford Oil Corp. No. 1 Neiman, Estaban Lopez Sur. Drlg. sdy. L. 6,053 ft.
Shields Oil Co. et al No. 1 C. F. Sasse, Aldrete 6¼ Lge. T.D. 6,330 ft.; perf. csg. 6,325-29 ft.; tstg.

Starr County

Circle Oil Co. No. 1 Sabas Olivarez, C. C.S.D.&R.G.N.G. Sur. No. 241, 8½-min. D.S.T. 4,560-73 ft.; recvd. 425 ft. oil; 90 lbs. press.; T.D. 4,921 ft.; D.S. T. 4,908-21 ft.; rec. 500 ft. oil; T.D. 5,150 ft.; 7-in. csg. on bttm. Perf. csg. 5,115-22 ft.; flwd. 55 B.P.D.; ⅛-in. ck.; tstg.
Pistol Hill Oil Co. No. 1 Alvarez, J. J. Guiterrez, Porc. 72. Drlg. sh. 776 ft.; no report.
Rhinehart and Bowman No. 1 Bowman, J. C. McCarty Sur. Loc.
Sun Oil Co. No. 2 McKinney, A. J. Smith Sur. No. 242. Drlg. sh. 4,739 ft.
Sun Oil Co. No. 3 McKinney, A. J. Smith Sur. No. 242. Drlg. sh. 1,136 ft.
Sun Oil Co. No. 1 N. R. Montalvo, Los Retachez gr., Juan Jose Sais Sur. No. 347. Drlg. sh. 1,512 ft.
Transwestern Oil Co. No. 1 Dallas Jt. Stk. Ld. Bnk., Gavino Silvas Sur. 9⅝-in. csg. 1,439 ft.; S.D. 5,025 ft.

Webb County

Harvey & Henderson No. 2 Benavides, J. Poitevent Sur. No. 459. Drk.
Houser and Campbell No. 2 Puig, Edrington subd. of Aberca De Arriba gr. R.U.
Magnolia Pet. Co. No. 1 Duval County School Land. Duval County School Land League No. 101. Loc.
Richardson Pet. Co. No. 1 A. M. Bruni, H.&G.N.R.R. Sur. No. 17. Loc.
Superior Oil Co. No. 2 Masterson, C.C.S.D. &R.G.N.G.R.R. Sur. No. 17. T.D. 2,374 ft.; abd.

Williamson County

W. O. Caffey No. 1 Fuchs, Francis Bradley Sur. No. 6. T.D. 1,125 ft.
H. H. Coffield and Taylor Ref. Co. No. 2 Caller, H.T.&B. Sur. No. 7. Drlg. 1,510 ft.

Victoria County

L. B. Burnette, Jr., Tr., No. 1 D. C. Reed, E. Leichtle Sur. Drlg. sh. 755 ft.

Zapata County

Joe Martinez No. 1 F. Zaragosa, J. V Borego gr. Drlg. sh. 1,269 ft.; no report.

EAST TEXAS

(Border Counties)

Hawkins County

F. H. Barnwell No. 1 Smith, A. P. Hope Sur. Cg. 2,830 ft.; D.S.T. 2,280 ft. tstd. dry.
W. S. King No. 1 Taylor, Martin Sur. R.U.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 E. Crawford, A. D. S. Coy Sur. R.U.
Ark.-La. Gas Co. No. 1 Moseley, Alex Johnson Sur. D.S.T. 5,969-93 ft.; tstd. 20,000,000 ft. gas in 6 min.; drlg. sh. &L. 6,013 ft.
Cable Tool Drlg. Co. No. 1 Howard, John Hanks Sur. Set 5½-in. csg. 6,058 ft.; T.D. 6,084 ft.
Cable Tool Drlg. Co. No. 1 Schellinger, John Hanks Sur. Drlg. sh.&L. 5,503 ft.
Gulf Prod. Co. No. 2-A Ray, John Hanks Sur. 9⅝-in. csg. 1,967 ft.; D.S.T. 6,060-80 ft.; tstd. 122 ft. fluid; S.O. in 22 min.; ¾-in. cks. T.&B.; set 5½-in. csg. 6,080 ft.; perf. 6,060-78 ft. and tstd. S.G.; used 3,000 gal. acd.; tstg.; T.D. 6,080 ft.
G. Scott Hammond No. 1 W. S. Ford, C. Grayson Sur. 9⅝-in. csg. 1,262 ft.; csg. seat would not hold; skd. 24 ft. east and R.U. on 2nd hole.
Harry Hanbury No. 1 Davis, W. R. Meyer Sur. Drlg. sh.&L. 5,001 ft.
Phillips Pet. Co. No. 2 Henderson, T Gillespie Sur. Set 7-in. csg. 6,073 ft.; W.O.C. 6,090 ft.
Shell Pet. Corp. No. 1 Stephenson, G. Perry Sur. 8⅝-in. csg. 1,013 ft.; 5-in. csg. 5,991 ft.; perf. 5,973-90 ft.; swbg. to test 5,996 ft.
Shell Pet. Corp. No. 2 Whelan, Thos. Gillespie Sur. Drlg. 575 ft.
Union Prod. Co. No. 10 Hutchinson, A. D. S. Coy Sur. 9⅝-in. csg. 1,019 ft.; 7-in. csg. 6,103 ft.; T.D. 6,140 ft.; comp. 175 B.P.D. 10/64-in. ck.; T.P. 1,350 lbs.; C.P. 1,950 lbs.

Marion County—Other

Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. T.D. 2,394 ft.; swbd. dry; shot with 2 qts. nitro at 2,334 ft.; tstd. dry; S.D. 2,394 ft.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. S.D. 5,885 ft.; flows ½ to 3 bbls. 41-grav. oil and goes dead; C.P. 500 lbs.; will attempt to comp. as gas well.

San Augustine County

Superior Oil Co. et al No. 1 Long Bell Lbr. Co., S.P.R.R. Sur. 10¾-in. csg. 440 ft.; drlg. 2,327 ft.

Shelby County

Redditt & Gray No. 1 Pickering Lbr. Co., Childers Sur. Set 7-in. 5,080 ft.; T.D. 5,139 ft.; making est. 100,000,000 ft. gas with 55-grav. brown dist.: C.I.C.P. 2,500 lbs.; C.I.T.P. 2,300 lbs.; flwg. 3 B.P.H. crude and 7,000,000 ft. gas.

WEST TEXAS WILDCATS

Andrews County

Anderson & Prichard-Osage Drlg. No. 1 Univ., Sec. 13, Blk. 14, Univ. Sur. Drlg. 1,680 ft.
Rogers & Rogers No. 1-B University, Sec. 20, Blk. 9, Univ. Sur. Loc.
Honolulu Oil Corp. No. 1-18 J. E. Parker Sec. 18, Blk. A-44, P.S.L. Sur. W.O.C. 220 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown. 5 mi. W of S end of Fuhrman pool. S.D.O. 4,981 ft.
Texas Co. No. 1-H University, Sec. 4, Blk. 14, Univ. Sur. P.B. 4,082 ft.; prep. perforate.
J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. Tstg. 4,477 ft.
L. H. Wentz No. 1-L W. F. Cowden, Sec. 3, Blk. 43, T.&P. Sur. D.&A. 4,436 ft.
H. C. Wheeler, No. 1 White-Shelton Sec. 18, Blk. 36-A, P.S.L. Sur. S.D.O. 4,081 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 39, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Standard O. of Texas No. 1-4 University, Sec. 4, Blk. 30, Univ. Sur. Loc.

Culberson County

Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex. Oil No. 1 J. E. Neely, Sec. 28, Blk. 35, T.&P. Sur. Drlg. 1,366 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D. 3,508 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur.; 6,000-ft. test. Drlg. 1,350 ft.

Ector County

Fields et al No. 1 Owenwood, Sec. 6, Blk. 44, T.&P. Sur. S.D.O. 4,501 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,571 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25. Blk. 2, H.&G.N. Sur. Flwd. 148 B.O. in 9 hrs.; P.B. depth of 7,400 ft.

Glasscock County

Crusader Pet., Inc., No. 1 A. D. Neal, Sec. 20, Blk. 33, T.&P. Sur.; 3,200-ft. test. Drlg. 2,350 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. Drlg. 5,263 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Jeff Davis Parish

Joiner Oil Corp. No. 1 Jones-Coffield. D.&A. 3,747 ft.
H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. R.U.S.T.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Menard County

C. D. Haggerty No. 1 Callon, Sec. 36, Jim Franz Sur. Tools out; making 500,000 ft. gas 1,270 ft.; S.D. 1,270 ft.

Mitchell County

Ajax Drlg. Co. No. 1 Schustes, Sec. 25, Blk. 17, S.P.R.R. Sur. Drlg. 1,125 ft.

Pecos County

G. T. Abell et al No. 1 Baldwin Est., Sec. 24, Blk. 9, H.&G.N. Sur. S.D.; H.F.W. 445 ft.
J. R. Bell No. 1-C Gulf-Shearer, Sec. 11, Blk. 10, H.&G.N. Sur. Drlg. 650 ft.
Childress Royalty No. 1 Humble-Shearer, Sec. 103, Blk. 10, H.&G.N. Sur. Loc.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.C. Sur.; 2,500-ft. test. S.D.; csg. 1,941 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Drlg. 155 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. S.D.; csg. 960 ft.
S. Thompson No. 1 Elsinore Cattle Co. Sec. 54, Blk. D, G.C.&S.F. Sur. S.D. 7,342 ft.

Reagan County

John W. Emch No. 1 T.&P. Ld. Trust, Sec. 203, Blk. 1, T.&P. Sur. D.&A. at 2,752 ft.

Reeves County

Ohio Oil Co. No. 1 Papham, Sec. 18, Blk. 54, T.&P. Sur. Drlg. 5,665 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 140 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. Drk.

Scurry County

Coffield & Guthrie No. 1 First Natl., Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. M.I.M.
Coffield & Guthrie No. 1 E. E. Spears et al, Sec. 130, Blk. 97, H.&T.C. Sur. Tstg. 2,366 ft.; P.B. depth.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch Sur. W.O.C.; cave 4,948 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. U.R. 715 ft.

Val Verde County

A. W. Little No. 1 R. W. Sellers, Sec. 34, H.&G.N.R.R. Sur.; 1,500-ft. test. D.&A. at 1,650 ft.

Ward County

Edwards & Donnelly No. 1 J. S. Reynolds, Sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 150 ft.
Robt E. Mitchell No. 1 Allen, Sec. 7, Blk. 32, H.&T.C. Sur. Drlg. 1,980 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Brosahara, Sec. 22, Blk. 77, P.S.L. Sur. P.B. 3,329 ft.; C.O.

Yoakum County

J. E. Mabee No. 1 N. W. Willard, Sec. 741. Comp.; 2,840 B.O.P.D.
Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743. Flwd. 2 B.P.H., 2% oil; tstg. on pump 5,256 ft.

TEXAS PANHANDLE

Collingsworth County

Tinsley, White & Knoll No. 1 Frank Knoll, Sec. 62, Blk. 16, H.&G.N. Sur. C.&P.
White No. 1 Wischamper. S.D. 2,263 ft.
Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. Tstg. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 3,855 ft.

Gray County

English No. 1 Eudy. S.D. 3,977 ft.
Trippiehorn No. 2 Webb, Sec. 12, Blk. A-9, H.&G.N. Sur. R.U.S.T.

Kent County

E. Dolman et al No. 1 C. V. O'Keefe, Sec. 50, Blk. 1, 15½-in. csg. set at 140 ft.; drlg. at 180 ft. last report.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 1,880 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.&F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Drlg. 5,645 ft.

Roberts County

Whitlock No. 1 Cunningham. S.D. 2,817 ft.

E. C. TEXAS WILDCATS

Cherokee County

J. R. Bunn No. 1 S. W. Lang, Levi Jordan Sur., 7 mi. S of Rusk. Drlg. 3,613 ft.
C. C. Lanier No. 1 A. T. O'Neal, J. M. Procella Sur., 3 mi. E of Troup. Loc.

Collins County

G. L. Pace Pet. Co. No. 1 E. E. Hooper, J. Rutherford Sur., 2 mi. E of Blue Ridge. Drlg. 2,195 ft.

Falls County

W. H. Mahon No. 1 V. H. Moore, N. K. Robinson Sur., between Lott and Rosebud. S.D.O. 315 ft.

Grayson County

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. S.D.O. 3,929 ft.

Henderson County

J. V. Scrivenor No. 1 Wm. Richardson Est., F. Holland Sur., 6 mi. NW of Athens. Drlg. 2,300 ft.
Tide Water-Seaboard-Humble No. 1 Sadie Starr McGee, R. Acosta Sur., 3½ mi. NE of Murchinson. Drlg. 5,670 ft.

Houston County

John G. Mayo No. 1 E. C. Lively, S. Rogers Sur., 4 mi. NE of Grapeland. Cg. 5,871 ft.
Wynne Drlg. Co. No. 1 May Price. T. Strother Sur., 4 mi. W of Grapeland. S.D. 500 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.
W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D. 3,104 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. S.D 30 ft.

McLennan County

C. E. Porter No. 1 B. D. Burchett, De la Vega Sur., just SE Waco. S.D. 695 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 30 ft.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co., G. S. Parks Sur., 17 mi. N of Clarksville. S.D. 71 ft.

Smith County

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. S.D. 1,879 ft.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. Gas blowout 148 ft.; W.O.C. 232 ft.

NORTH TEXAS WILDCATS

Archer County

L Sikes No. 1 Walter Ford, T. M. Cecil Sur. A-982. T.D. 4,204 ft.; O.W.D.D. to 5,500 ft.; T.D. 4,437 ft.; B.S.S.O. 4,379-4,400 ft.; cmt. 5½-in. liner on bottom and will perforate.
Westmount Oil Co. No. 7 T. J. Dempsey. Sec. 10, D.C.S.L. Sur., O.W.D.D. Perf. csg. 4,139-44 ft.; blg. wtr. and tstg.

Baylor County

British American Oil Prod. Co. No. 1 F. C. Green, T.&N.O. Sur., Sec. 215. Drlg. 2,885 ft.

Cooke County

H. W. Caudle No. 1 E. E. Walker, H. Gilman Sur. Loc.; 5,500-ft. test.
Denver P. & R. Co. No. 1 D. B. Allred, De Los Santos Sur. A-894. S.D.O.; ran Schlumberger; S.S.O. 1,800-30 ft.
Sinclair Prairie No. 2 J. M. Best, T. Toby Sur. A-1054. B.O.S. 4,909-20 ft.; 6⅝-in. 4,909 ft.; B.O.S. 4,909-21½ ft.; W.O.C.

Foard County

Fleetwood & Kaufman No. 1 Prowers, H.&T.C. Sur., Blk. A. Drlg. 160 ft.

Grayson County

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Fsg. 562 ft.
J. H. McMurray No. 1 T. J. Long, Jas. Garland Sur. A-441. S.D.O. 3,929 ft.; ran Schlumberger; S.S.O. 2,595-2,601 ft.
C. E. Marshall No. 1 F. Christman, M. Ahalt Sur. A-147. S.S.O. 830-38 ft.; tstg.

Jack County

H. R. Lippitt No. 1 S. Franklin, H. Ferguson Sur. A-215. Tstg. S.S. gas 2,825-40 ft.
Noah Daves No. 1 K. D. Baker, Sec. 2709, T.E.L. Sur.; 4,000-ft. test. Recmt. 10-in. at 90 ft.; S.D.O. 2,320 ft.
Hanlon-Buchanan, Inc., No. 1 W. B. Munson, Sec. 1, T.C.R.R. Sur. H.F.W. 1,330 ft.
Southern O. & G. Co. No. 1 A. Eason, A. D. Kennard Sur. A-328. Drlg. 4,428 ft.
Texas Crusaders Oil Co. No. 1 M. L. Pigg, D. A. Norton Sur. A-1151. Drlg. 2,050 ft.

Montague County

Lobban et al No. 1 Henry Payne, Wm. Donoho Sur. A-178. Drlg. 970 ft.
H. H. Powell No. 1 Arch Durhan, W. J. Wagoner Sur. A-936. S.D.O. 1,800 ft.
Youngblood & Foree No. 1 J. A. Burnett, J. Lenow Sur. A-433. 6⅝-in. 4,139 ft.; S.S.O. 4,139-45 ft.; test S.W.&S.O.; R.U.R. to D.D.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Pits.

Wilbarger County

Phillips Pet. Co. No. 1 H. C. Shive, Sec. 79, H.&T.C. Sur., Blk. 14. Sat. L. 3,251-62 ft.; S.O.; 6⅝-in. 3,381 ft.; S.D.O.

Young County

Horwitz & Oldom No. 1 C. J. Tauch B, Sec. 248, T.E.&L. Sur. 6⅝-in. 4,113 ft.; T.D. 5,090 ft.; P.B. 4,160 ft. to test G.L. 4,136-60 ft.
Italio Pet. Corp. No. 1 H. M. Donnell, Sec. 4, S.P.R.R. Sur. S.D. 3,395 ft.
H. M. Leidecker No. 1 J. M. Nall, Sec. 1997, T.E.&L. Sur. Drk.
Long & Lupton No. 1 A. Crouch, L&G. N. Sur. A-1460. Drlg. 2,665 ft.
Magnus & McLester No. 1 B. B. Teague, E. S. Colthorp Sur. A-1390. Spudding.
Pitzer-West No. 1 Robt. Bulloch, J. P. Hume Sur., Abst. 140. Drlg. 3,200 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Sp.&S.D.
Art Cox et al No. 1 Lee, G. W. McBee Sur. No. 3. S.D.O. 2,890 ft.
H. P. Evans No. 1 C. M. Kilgore, Robt. Mitchell Sur. No. 141. Comp., 10 B. O.P.D.
Evans No. 1 J. F. Davis, S. Tull Sur. No. 894. Spd. and S.D.

Callahan County

Dobbs Oil Co. No. 1 Finley, Sec. 75, Bayland Orphans Home Ld. S.D.O. 1,720 ft.
Hal Hughes No. 1 Cooke & Jordan, Geo. Hancock Sur., Sec. 350. Tstg. 4,440 ft.
J. C. Jackson et al No. 1 T. J. Thompson, Sec. 30, B.B.B.&C. Sur. Drlg. 1,785 ft.
Roeser & Pendleton No. 1 Chas. Yost, Sec. 18, Blk. 8, S.P. Sur. Drlg. 1,106 ft.
Warren & Kleiner No. 1 Williams, Sec. 304, S.P.R.R. Sur. Tstg. 740 ft.

Coleman County

Arcadia Ref. Co. No. 1 W. R. Roberts, D. J. Holt Sur. Fsg. 2,685 ft.
P. A. Graves No. 1 F. Gillespie, N. B. Walters Sur. S.D.; T.D. 2,380 ft.
E. E. Kirkpatrick No. 1 F. Nixon, Burnett C.S.L. Sur. Drlg. 90 ft.
Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D. 415 ft.
S. B. Owens No. 1 Essac Keeney, Jno. H. Woods Sur. No. 483. S.D. 1,972 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. Fsg. 2,590 ft.
O. L. Johnson No. 1 Mrs. W. Jones, Sec. 34, H.&T.C. Sur., Abst. 1610. S.D. 1,721 ft.
Loraine No. 1 Carlisle, Sec. 9, Blk. 2, H.&T.C. Sur. M.I.M.

Eastland County

J. F. Baker No. 3 N. T. Mulloy, Wm.

Ahrenbeck Sur., Abst. 700. D.&A. 3,-087 ft.
Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D. 1,738 ft.
Hickok P. & D. Co. No. 1 Penn, Sec. 468, S.P. Sur. S.D. 4,058 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 2,868 ft.
Collard No. 1 W. L. Payton, H. Pierson Sur. No. 1, Abst. 1105. S.D. 185 ft.

Fisher County

General Crude No. 1 M. M. Flores, Sec. 212, Blk. 1, B.B.B.&C. Sur. R.U.R.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. Drlg. 1,950 ft.

Haskell County

Roeser & Pendleton and I.T.I.O. No. 1 M. O. Daugherty, Sec. 19, Wise C.S.L. Sur. S.D.O. 4,700 ft.
Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. S.D. 4,890 ft.

Hood County

Prince & Miller No. 1 J. H. Andrews, NW cor. of Geo. Sutherland Sur. S.O. at 485 ft.; C.O.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, Sec. 191, Lemuel Andrews Sur. S.D.O. in sd. 2,283 ft.
Brown Eagle No. 1 Waterson, Andrews Sur. No. 191. T.D. 2,283 ft.; S.D.
A. P. Kouri No. 1 W. C. Bennett, Sec. 42, C.A.L. Sur. Drlg. 2,325 ft.
Lucille Manley No. 1 fee, Sec. 4, Blk. 15, T.&P. Sur. T.D. 1,892 ft. in sand; U.R.
S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. SL, 2,428 fr. EL, J. E. Cockrell Subd. 2, G. Martinez Sur. 195. Loc.
Stiles et al No. 1 Cook, Sec. 89, B.B.B. &C. Sur., western part of county. D.&A. at 4,315 ft.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. S.D.O. 2,827 ft.
Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW Sweetwater. Drlg. 3,380 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,175 ft.
Glen Rose No. 1 H. D. Groves, SW¼ Sec. 350, T.&P. Sur. S.D.; T.D. 685 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. S.D. 3,894 ft.
Fox & Rudd No. 1 Shotwell, Sec. 59; B.A.L. Sur. Fsg. 1,632 ft.
R. H. Gordon and Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,-660 ft.; S.D. 4,293 ft.

Taylor County

Roberts & Choate No. 1 A. L. Lindsey, Sec. 22, Guadalupe C.S.L. Sur. T.D. 2,377 ft.; cleaning out; est. 125 B.O. P.D.
Carrol Snoddy No. 1 W. A. Parmelley, W. B. Harden Sur. No. 130. S.D.O. 1,920 ft.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., Sec 979, T.E.&L. Sur. Drlg. 4,133 ft.
Danciger O. & R. Co. No. 1 C. T. Brockman, Sec. 95, Comanche C.S.L. Sur. Cleaning out 4,716 ft.

California Oil Field Operations, October, 1938

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for October amounted to 20,423,178 bbls., an average of 658,812 bbls. per day. This is a decrease of 5,253 bbls. per day under September production.

Eighty-eight wells were completed during the month with an initial daily production of 67,600 bbls., compared with 69 wells completed during September with an initial production of 53,310 bbls.

OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Group No. 1—							
Belridge—North	2	4	2	2,856	63	0	0
Belridge—South	0	0	0	.....	86	0	0
Canal	1	3	1	3,330	13	0	0
Canfield Ranch	0	0	0	.....	1	0	0
Coalinga	6	4	2	11,150	812	5	0
Edison	0	2	0	.....	87	0	0
Elk Hills	0	0	0	.....	167	0	0
Fruitvale	1	0	1	280	173	0	0
Greeley	0	4	0	.....	16	0	0
Kern River	2	4	1	18	1,357	0	0
Kettleman Middle Dome	0	0	0	.....	3	0	0
Kettleman North Dome	1	8	2	8,832	213	0	0
Lost Hills	1	1	1	145	236	0	0
McKittrick	0	0	2	343	179	0	0
Midway-Sunset	2	2	2	78	2,441	0	2
Mountain View	0	1	0	.....	184	0	0
Mount Poso	3	2	3	379	267	1	1
Rio Bravo	2	6	2	4,470	18	0	0
Round Mountain	3	2	3	445	205	2	0
Ten Section	0	1	2	2,735	33	0	0
Wasco	0	3	0	.....	2	0	0
Wheeler Ridge	0	1	0	.....	27	0	0
Group No. 2—							
Capitan	0	0	0	.....	46	0	0
Elwood	0	0	0	.....	80	0	0
Rincon	0	1	1	60	48	0	0
San Miguelito	1	0	2	2,735	18	0	0
Santa Barbara	0	0	1	30	33	0	1
Santa Maria	1	4	0	.....	300	0	0
Summerland	0	0	0	.....	18	0	0
Ventura Avenue	4	8	1	1,861	230	0	0
Ventura-Newhall	1	9	2	1,011	558	0	1
Watsonville	0	0	0	.....	7	0	0
Group No. 3—							
Brea-Olinda	0	2	0	.....	342	0	0
Coyote—East	2	1	0	.....	86	0	0
Coyote—West	0	0	0	.....	56	1	1
Dominguez	0	2	0	.....	202	0	0
El Segundo	0	0	0	.....	56	0	3
Huntington Beach	4	4	0	.....	551	0	0
Inglewood	0	0	0	.....	200	0	0
Lawndale	0	0	0	.....	6	0	0
Long Beach	2	4	0	.....	1,266	0	0
Los Angeles	0	0	0	.....	112	0	1
Montebello	0	5	6	4,675	219	0	1
Newport	0	1	0	.....	.....	0	0
Playa Del Rey	0	0	0	.....	187	0	1
Potrero	0	1	0	.....	12	0	0
Richfield	0	1	0	.....	294	0	1
Rosecrans	4	8	4	4,742	108	0	0
Santa Fe Springs	1	0	0	.....	593	0	4
Seal Beach	0	0	0	.....	110	0	0
Torrance	18	15	31	9,065	645	0	2
Whittier	0	0	0	.....	138	0	0
Wilmington	10	7	16	8,360	579	0	0
Miscellaneous drilling	10	40	0	.....	.....	6	0
Group No. 4—gas fields							
Buena Vista Lake	0	0	0	.....	1	0	0
Buttonwillow	0	0	0	.....	5	0	0
Chowchilla	0	0	0	.....	.....	0	0
Delano	0	0	0	.....	.....	0	0
Dudley Ridge	0	0	0	.....	.....	0	0
Goleta	0	0	0	.....	.....	0	0
McDonald Island	0	0	0	.....	4	0	0
Rio Vista	1	1	0	.....	14	0	0
Semio Tropic	0	0	0	.....	1	0	0
Tracy	0	0	0	.....	.....	0	0
Total October	83	162	88	67,600	13,708	15	19
Total September	96	206	69	53,310	13,590	15	33
Decrease (*increase)	13	44	*19	*14,290	*118	0	14

CRUDE PETROLEUM PRODUCTION

(Figures of Production and Stocks are in barrels of 42 gallons)

	Total production October	Daily average Oct., 1938	Daily average Sept., 1938	Daily average Oct., 1937
Group No. 1—				
Belridge—North	393,625	12,698	12,553	16,648
Belridge—South	34,014	1,097	1,119	1,779
Canal	104,006	3,355	2,854	.....
Canfield Ranch	2,916	94	98	.....
Coalinga	276,556	8,921	10,940	15,815
Edison	82,729	2,669	2,555	3,943
Elk Hills	318,992	10,290	10,411	10,963
Fruitvale	240,134	7,746	7,743	8,535
Greeley	87,920	2,836	3,000	2,215
Kern River	356,474	11,499	12,031	15,381
Kettleman Middle Dome	1,118	36	40	101
Kettleman North Dome	1,927,667	62,183	63,468	81,195
Lost Hills	104,012	3,355	3,482	4,145
McKittrick	97,413	3,142	3,362	4,512
Midway-Sunset	1,747,828	56,382	57,331	73,465
Mountain View	285,914	9,223	9,695	17,262
Mount Poso	462,846	14,931	14,811	19,749
Rio Bravo	235,546	7,598	8,152	.....
Round Mountain	403,958	13,031	13,516	15,166
Ten Section	264,458	8,531	8,218	3,031
Wasco	11,691	377	377	.....
Wheeler Ridge	9,483	306	310	312
Group No. 2—				
Capitan	92,291	2,977	2,897	2,919
Elwood	158,902	5,126	5,236	8,315
Rincon	106,114	3,423	3,515	3,599
San Miguelito	87,376	2,818	2,295	3,570
Santa Barbara	11,926	385	380	574
Santa Maria	570,391	18,400	19,580	13,764
Summerland	1,416	46	32	34
Ventura Avenue	1,064,298	34,332	34,237	34,706
Ventura-Newhall	170,477	5,499	5,313	5,107
Watsonville	930	30	30	60
Group No. 3—				
Brea-Olinda	176,859	5,705	5,598	6,151
Coyote—East	100,943	3,256	3,289	3,955
Coyote—West	247,970	7,999	8,105	7,056
Dominguez	807,889	26,061	25,059	29,297
El Segundo	182,350	5,882	6,499	21,818
Huntington Beach	979,585	31,600	31,208	36,275
Inglewood	418,458	13,499	13,752	18,137
Lawndale	2,176	70	64	89
Long Beach	1,690,985	54,548	55,964	57,788
Los Angeles-Salt Lake	17,750	573	570	574
Montebello	437,608	14,116	12,394	7,871
Playa Del Rey	183,944	5,934	5,727	7,789
Potrero	18,610	600	678	389
Richfield	270,596	8,729	8,820	9,015
Rosecrans	434,598	14,016	14,248	4,218
Santa Fe Springs	938,756	30,283	31,536	41,365
Seal Beach	249,590	8,051	8,118	9,419
Torrance	619,685	19,990	19,542	7,223
Whittier	28,277	912	957	888
Wilmington	2,903,218	93,652	92,356	60,299
Total October	20,423,178	658,812	664,065	694,481
Total September	19,921,957	664,065		
Decrease	*501,221	5,253		

*Increase.

Canadian Fields

(Continued from Page 96)

of the Kevin-Sunburst and Cut Bank fields in Montana.

Dr. Robin Willis, who geologized the area for Nordon Corp. estimates that, in comparison with the same formations in fields producing from the same formations in Montana, the Alberta structure will show steeper dips, more closure and a higher ratio of drainage area, with rock pressures ranging from 1,200 to 2,000 pounds compared with around 550 pounds in Kevin and Pondera.

Taber Field

In the Taber field, Southern Alberta, North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is reaming to lower 8⅝-inch casing to bottom at 2,440 feet. The bit is in sandy formation near the base of the Alberta shales, with increased gas showings and traces of crude; and is expected to get the bottom of the upper Cretaceous formation around 2,565 feet. Production is expected in the Sunburst sand at the base of the lower Cretaceous. Plains Petroleum Corp. No. 4, LSD 15, Section 25-9-17w4, is standing at 3,515 feet, waiting for underreamer. It got the Madison lime, with sulfur water, at 3,482 feet, and may either be deepened or plugged back to test the Ellis formation. Border Petroleums No. 1, LSD 5, Section 32-19-17w4, is running 8-inch casing to 2,504 feet preparatory to deepening. Noble Drilling Co. No. 1, LSD 14, Section 33-8-17w4, is working on derrick.

Seismic Surveys Completed

In the Blood Indian Reserve area near Lethbridge, the Heiland Research Corp. of Denver has completed seismic surveys for West Petroleums, Ltd. of Toronto, which holds rights covering 163,-600 acres on the northern portion of the reserve. The survey indicated two closures and core drilling indicated favorable geological conditions. Oil horizons are expected between 2,800 and 3,200 feet, around 4,300 feet, and in the limestone, which is expected at 5,000 feet. The work was done under supervision of Eugene Coste & Co. of Toronto and Russell V. Johnson of Calgary, with Dr. Hodgson, chief of the Dominion Department of Seismology, as Dominion government attache. The acreage is under control of the federal government at Ottawa. Further preliminary work next spring will be followed by the drilling of commercial tests.

The Geophysical Survey Society of Dallas, Texas, has completed a six months' survey for unnamed interests in the Medicine Hat district. The survey was in charge of M. C. Kelsey, with a staff of 17.

Ribstone Producer

On the Blackfoot-Ribstone structure, East-Central Alberta, Blackfoot-Ribstone Oils No. 1, LSD 7, Section 28-43-2w4, found a sand at 1,865 feet with a fair show of heavy crude, estimated good for perhaps 40 bbls. a day. On deepening, a gas flow estimated 2,000,000 feet a day was picked up between 1,975 and 1,981 feet with a heavier crude showing at 2,034 feet. Cores at this depth showed heavy crude saturation in the first few inches, accompanied by considerable gas. Casing will be set and the hole deepened into the sand for a definite production test. The crude is around 24-gravity and the indications are the best yet encountered in the Ribstone area, where several small producers have been drilled.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Dec. 10 High	Week ending Dec. 10 Low	Week ending Dec. 10 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	70⅜	68½	68¾	Amerada Corp.	788,675	N.P.	50cQ	10-31-38	$3.04	$2.52	$.200	114⅞	51½	125½	75
27⅜	17¾	23	22¼	22¼	Atlantic Refining	2,663,999	$25	25cQ	12-15-38	3.51	2.59	1.00	37	18	35½	26⅝
23¾	12½	19½	18¼	18⅝	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.91	1.14	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	18	17	17⅝	Barnsdall Oil Co.	2,250,344	$5	25cQ	11-1-38	0.85	1.01	1.00	35¼	10	28¼	14⅛
10¾	7	8¾	8¼	8⅝	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	11-15-38	1.48	1.18	.90	17⅞	7	17¼	11½
35⅜	21¼	29⅛	27½	28¼	Continental Oil of Delaware	4,682,583	$5	25cQ	12-20-38	2.98	2.05	1.50	49	24	44⅞	28½
9¾	5	7⅞	7¼	7½	Houston Oil (new)	1,098,618	$25		10-17-30	0.94	—0.03	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	16	15⅛	15⅛	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-38	2.86	2.57	1.50	35⅝	14	30⅞	17¼
17¾	10⅝	13¾	13	13	Mission Corporation	1,382,945	$10	$1	6-29-38	1.31	0.48	1.25	34	15	29⅞	16¾
23	12½	17¾	13	13⅞	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	4.90	2.02	(‡)	41⅜	17⅝	75½	19⅞
14⅞	8⅞	9⅜	9	9⅛	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	1.30	0.70	1.00	22⅞	8	18	12⅛
15⅞	10¼	11¼	10½	10½	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	1.39	1.58	.75	29⅜	11⅜	23½	11⅜
9¼	6¼	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	1.18	0.52	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	41½	39½	40⅝	Phillips Petroleum	4,449,052	N.P.	50cQ	12-1-38	5.42	4.02	2.75	64	30⅛	52⅜	33⅛
25⅜	15	22	21	21	Plymouth Oil Co.	1,029,800	$5	35cQ	12-12-38	2.85	1.65	1.65	29⅞	13	27¾	11⅞
13½	8¼	10⅛	9⅞	10⅛	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	2.15	1.63	.25	24⅜	8¾	27⅞	16
9⅞	5	8⅞	8¼	8¼	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	0.35	....	.25	6½	4⅛	..	..
27½	15½	21¾	20⅝	20⅝	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-38	1.97	2.00	1.00	54⅛	16	44	30½
18⅜	10	14½	13¼	13⅜	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.44	1.57	1.00	34¾	14⅞	28¼	14¾
34⅞	18½	26⅞	25⅞	25⅞	Skelly Oil	1,003,949	$15	50c	12-15-38	6.07	4.42	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	13⅞	13	13⅛	Socony-Vacuum	31,151,071	$15	25c	9-15-38	1.82	1.38	.80	23¼	13	17½	12½
34⅞	25⅛	27	26	26⅛	Standard Oil of California	13,014,754	N.P.	35cQ†	12-15-38	3.17	1.79	2.00	50	27⅛	47⅝	35
35½	24¾	27⅜	26⅜	26⅜	Standard Oil (Indiana)	15,267,030	$25	25cQ	12-15-38	3.66	3.09	2.30	50	26½	48½	32¾
50⅛	32½	50	50	50	Standard Oil of Kansas	112,837	$10	$2	12-8-38	6.93	1.91	5.00	43	30⅝	31	25
58⅜	39¾	50⅞	50	50¼	Standard Oil of New Jersey	26,224,767	$25	50c§	12-15-38	5.64	3.73	2.50	76	42	70⅜	51⅛
61¾	45	61¾	57	61¼	Sun Oil	2,316,484	N.P.	25cQ	12-15-38	3.86	3.25	$1 & 8% stk.	77½	44½	91	70
4¼	1¾	3½	3⅛	3⅛	Superior Oil Corp.	1,388,079	$1			0.32	0.14	....	7¾	1½	6¾	3
49⅝	32⅝	44⅞	42⅞	43¼	Texas Corp.	10,875,006	$25	50cQ	1-5-39	5.02	4.10	2.25	65½	34⅜	55¼	28⅞
5¾	2⅝	4⅞	4⅝	4⅝	Texas Gulf Producing Co.	888,138	N.P.	15c	12-15-38	0.68	0.93	.10	9⅝	2	8⅞	4⅝
12½	7	9¾	9⅜	9⅜	Texas Pacific Coal & Oil	888,140	$10	10c	12-1-38	1.11	0.72	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	13⅛	12⅝	12⅝	Tide Water Associated	6,369,175	$10	25cQ	12-1-38	2.08	1.03	1.20	21⅝	13⅛	21⅜	14¾
22½	17⅛	19	18¼	18½	Union Oil of California	4,666,270	$25	30cQ	11-10-38	2.58	1.40	1.40	28¼	17½	28½	20⅝
23½	20	20⅞	20	20⅛	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-38	1.70	1.76	1.60	31½	22	31⅝	22⅝
3½	1⅝	3⅛	2⅝	2⅝	Wilcox Oil & Gas	506,522	$5		5-10-28	0.24	—0.06	....	6¼	1¾	5¼	2¾

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend.

New York Curb Exchange

1938 High	1938 Low	Week ending Dec. 10 High	Week ending Dec. 10 Low	Week ending Dec. 10 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	9¼	9	9⅛	American Republic Corp.	1,308,049	$10	10c	7-11-38	$0.27	$0.28	$0.40	10	6⅝	..	..
10¼	4⅞	7	6⅛	6⅛	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	1.90	1.26	2.00§	21⅜	7	21	13¼
39	24¼	26	26	26	Buckeye Pipe Line Co.	200,000	$50	50c	12-15-38	4.02	4.40	3.75	51½	36	50	39¾
117½	97	117	116¾	117	Chesebrough Mfg. Co.	120,000	$25	$2Q†	12-19-38	6.73	7.46	7.00	12	95½	124¾	105
11	5⅛	7	6	6⅛	Cities Service (new)	3,714,317	$10	....	6-1-32	1.02	0.13	....	5⅜	1½	7⅜	3
2⅜	⅞	1⅜	1	1⅛	Cosden Petroleum	462,551	$1	....	.....	0.19	....	....	5½	1½	4½	1½
27½	17½	23	22¼	22½	Creole Petroleum	6,975,383	$5	50cSA†	12-15-38	1.61	1.23	1.60	38¾	20¼	39	19⅞
10¼	5½	7¼	7⅛	7⅛	Darby Petroleum	351,390	$5	25cSA	1-15-39	1.36	1.26	.50	18⅝	6½	18½	9
3½	1¾	1½	1½	1½	Derby Oil & Refining	263,162	N.P.			1.34	0.66	....	8⅜	2¼	6¾	1⅞
31	19	..	..	..	Eureka Pipe Line	50,000	$50	50c	11-1-38	—0.12	—0.62	4.00	47½	24½	47½	38½
46⅞	33	38⅛	37⅛	37¾	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-38	3.51	2.90	1.00	63½	33	59	36
72⅝	56	67¾	65⅝	65⅝	Humble Oil & Refining	8,987,840	N.P.	62½c	12-27-38	5.22	3.80	2.00	87	54⅞	80	57
19½	14⅛	17	15¾	16⅝	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	0.98	0.95	1.25	24¼	14½	24½	19¾
9⅜	6⅝	6⅝	6⅜	6⅜	Indiana Pipe Line	300,000	$10	20c	11-15-38	1.03	1.00	.80	15	5⅞	9¾	5½
31¼	21	26⅛	25¾	25¾	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	....	1.81	2.50	39½	23½	39⅝	32⅝
5	2⅛	3⅛	2⅛	2⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	0.17	0.20	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	19⅝	19⅝	19⅝	Lion Oil Refining	434,820	N.P.	25cQ	10-10-38	2.17	1.43	1.50	34	12½	17⅝	7⅝
10⅜	6⅝	9⅛	9	9⅛	Lone Star Gas	5,553,747	N.P.	20c	12-22-38	1.14	1.02	.60	14¼	5¼	14¼	9⅞
9⅜	6½	7⅝	6⅞	6⅞	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	12-15-38	0.58	0.64	.50	15¼	6¾	15⅜	9⅞
9¾	6⅜	8⅛	7⅜	8	Midwest Oil Co.	998,444	$10	50c	12-15-38	1.14	0.95	1.00	14⅝	6¼	..	..
5¾	6½	4⅞	4⅝	4⅞	Mountain Producers	1,593,584	$10	30cSA	12-15-38	0.76	0.62	.60	7⅞	4⅛	8⅝	5
14⅝	11½	13⅞	12⅝	13	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-38	0.96	1.19	1.00	19½	12	23	17⅝
9¼	6⅝	7⅝	7⅜	7⅜	National Transit	509,000	$12.50	40c	12-15-38	1.19	0.79	1.00	12½	7¼	15⅜	9¼
2⅝	1½	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-38	0.02	0.02	....	5	1⅜	6⅝	1⅝
4½	4	3⅝	3⅝	3⅝	New York Transit	100,000	$5	15c	10-15-38	0.49	0.34	1.00	5⅜	3⅞	6¼	4¼
6	4	4¾	4⅝	4⅝	Northern Pipe Line	120,000	$10	15c	12-1-38	0.78	0.66	1.00	12¾	5¾	9¾	4⅞
7⅜	3½	6⅜	5½	6¼	Pantepec Oil	2,441,142	$1	....	.....	....	0.05	....	9⅝	2⅜	10½	3¼
4½	1⅝	4½	1¾	2½	Root Petroleum Co.	336,045	$1	25c	2-1-37	—0.17	0.45	.25	12¾	2	19¼	4½
4	2⅛	2⅝	2¼	2½	Ryan Consolidated	296,931	N.P.	....	.....	0.46	...	....	6½	2¼	4¾	1⅞
5⅜	3¼	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	0.85	0.41	.45	7¼	3⅞	7⅞	3¼
39	28¾	30½	29¼	29¾	South Penn Oil	1,000,000	$25	37½cQ	9-24-38	4.64	3.59	3.65	56	35	44	32½
22¼	19	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	10-1-38	0.95	0.97	2.00	42	20	60	44
18¾	15	17⅝	17⅛	17⅜	Standard Oil of Kentucky	2,604,790	$10	50cQ†	12-15-38	1.60	1.46	1.50	21⅛	14¾	23⅜	17⅛
8¾	5½	6¼	6	6¼	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	—0.58	0.42	.25	13¾	8	14⅝	11
22¾	16¼	20	19½	19½	Standard Oil of Ohio	753,740	$25	25c	12-15-38	3.67	4.77	1.50	45	16	40	21¾
3¼	2⅛	2½	2¼	2¼	Sunray Oil	2,006,176	$1	10c	12-24-37	0.42	0.26	.25	4⅞	2	5	2⅝
5¼	3½	4	4	4	Texon Oil & Land	936,024	$2	15cQ	9-30-38	0.51	0.36	.45	7⅝	2	9¾	5⅜
7⅝	4¼	4¾	4½	4½	Transwestern Oil Co.	750,000	$10	....	.....	0.48	0.06	....	13⅞	4⅝	..	..
5¼	2⅝	3	2⅝	2⅝	United Gas Corp.	7,818,959	$1	....	.....	0.25	0.20	....	13⅞	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

Personal Paragraphs

JOHN HOWARD PEW, president of the Sun Oil Company, will speak at the annual inspirational meeting of the Dallas Salesmanship Club on February 9. Each year the club brings a nationally known speaker.

JOHN E. FARRELL, independent operator of Fort Worth, Tex., and one of the main developers of the K.M.A. pool, left Tuesday of this week with Mrs. Farrell for St. Moritz, Switzerland, where they will spend Christmas with their daughter. They will devote several weeks to touring of European countries in their automobile, which is being shipped.

COL. T. H. BARTON, president of the Lion Oil Refining Company, El Dorado, Ark., is spending several days in Florida.

J. A. LaFORTUNE, vice president of the Warren Petroleum Company, has returned to Tulsa from Cleveland, Ohio, where he went to testify for the Hickok Oil Company in a tax case.

J. W. VAIDEN, manager of the gasoline division for the Skelly Oil Company, was master of ceremonies at a safety banquet given in Pawhuska, Okla., for employes of the Lyman, Wynona, and Maramec natural gasoline plants in Oklahoma. Lyman established a record of three years without a lost-time accident and Wynona and Maramec three and one-half years each.

GERALD W. HOSTETLER, of the Petty Geophysical Engineering Company staff, and MISS ROBERTA HAUDER, of Goshen, Ind., were married Sunday, December 11, in Goshen. After a honeymoon trip to New York they will reside in San Antonio, Tex., headquarters of the company. Mr. Hostetler returned recently from Venezuela, where he was engaged in geophysical prospecting.

H. B. FELL, executive vice president of the Independent Petroleum Association of America, has been appointed chairman of the association's standing committee on balance of supply with demand. J. S. BRIDWELL, Wichita Falls, Tex., president Bridwell Oil Company, is vice-chairman. The other members are J. A. AYLWARD, president Aylward Production Company, Wichita, Kans.; VAN S. WELCH, president Flynn, Welch & Yates, Inc., Artesia, N. M.; and C. M. BOGGS, president Kanotex Refining Co., Arkansas City, Kans.

G. C. CLARK, of the geological staff of the Stanolind Oil & Gas Company, in Amarillo, Tex., will be transferred January 1 to the Fort Worth, Tex., offices.

ERNEST K. PARKS has resigned as head of production engineering in the Southern district for the Standard Oil Company of California and plans to take an active part in petroleum development and production in the Los Angeles area. Mr. Parks served 14 years with that company following his graduation from Stanford University in 1924. He occupied positions in the central engineering department in San Francisco, in the department of economics, and in various field stations in the San Joaquin Valley fields.

FREDERICK L. KOETHEN, Buffalo, N. Y., lubrication research expert and consultant, has been appointed technical director of American Lubricants, Inc., manufacturer of lubricating oils and greases.

DR. J. A. L. HENDERSON, London, England, associated with the New Brunswick Gas & Oilfields, Ltd., as petroleum engineer, has returned home after a visit to the company's headquarters in Moncton, Canada.

M. B. TUCKER, engineer for the Shell Petroleum Corporation and general chairman of arrangements for the first annual petroleum charity ball in Tulsa to be held December 16 at the Cafe de Petrol on the International Exposition grounds, has been kept busy. His job and that of his committees include arranging for "a battle of bands," Joe Linde vs. "The Cavaliers," with a floor show. The proceeds will go to clothe needy children.

ABDEL HAMEED el DIFRAWI EFFENDI has been appointed general manager of the Egyptian government's refinery at Suez, succeeding DR. M. B. BLACKLER, who has returned to London. Difrawi Effendi is the first Egyptian to be appointed to a top executive position in the government's oil refinery. He studied petroleum engineering in the University of California and later served with the old Marland Oil Company.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Too much oil is being produced in Oklahoma and operators are cautioned by the Prairie Oil & Gas Company, largest buyer, that its storage room is 95 per cent filled. It has 42,548,553 barrels in storage.

The Humble field, with a production of 4,400 barrels per day, is the largest in the Gulf Coast district. Sour Lake is second, with 3,900 barrels. The once great Spindletop field is down to 1,600 barrels per day.

In Illinois, Crawford, Lawrence and Clarke counties are the busiest oil districts, but Cumberland, Marion, Clinton, Wabash, and Macoupin counties all had oil completions in November.

20 YEARS AGO

Island Oil & Transport Corporation No. 1, in the Tampico field, is flowing 100,000 barrels per day. It offsets a Texas Company well that started at 20,000 barrels per day.

Lieut. Alvin W. Splane, son of W. W. Splane, widely known oil and gas man of Oil City, Pa., was killed in an airplane collision near West Point, Miss.

A wildcat in Ellis County, Oklahoma, which several months ago penetrated a shallow water stratum, is still flowing fresh water at the rate of 2,000 gallons per minute between the 10- and 8-inch casings. The well is drilling for oil at 1,000 feet.

10 YEARS AGO

A wildcat in the Zwolle district in Louisiana is producing 41-gravity crude.

A well in the Yates pool, Pecos County, Texas, after producing a year, was deepened a little and produced 4,441 barrels of oil in 60 minutes, total depth 983 feet. It originally started at 2,830 barrels per hour.

James J. Bisett, one of the owners of the Mid-Continent Supply Company, died in Fort Worth, Tex., on December 12. He was formerly vice president of the Continental Supply Company.

Robert W. Eagan, vice president and general manager of The Oil and Gas Journal, died in Tulsa on December 15.

GEORGE W. LA PEIRE, consulting geologist, has opened an office in Belleville, Ill.

P. H. JENNINGS, geologist for the Magnolia Petroleum Company, has been transferred from the Shreveport office to Lake Charles, La.

WILLIAM G. FRANKE, of the American-Mexican Petroleum Corporation, succeeds CHARLES P. HIRTH, vice president of the Hughes Oil Company, as president of the Chicago Oil Men's Club.

R. F. HODGE, chief material man for the Magnolia Petroleum Company in Pampa, Tex., has been transferred to Kermit, Tex., to replace J. E. RITCHESON who has been sent to Salem, Ill. W. C. WYATT, of Oilton, Tex., has taken over Mr. Hodge's duties in Pampa.

COXEY EVANS, superintendent in charge of production for the Cities Service Oil Company in the Seminole, Okla., field, received the president's medal of the National Safety Council last Friday. By using artificial respiration Mr. Evans revived JOHN L. RAINES, an employe, who was asphyxiated by gas. The award was presented by G. O. Lockwood, safety director of the company.

CHARLES V. TERRELL, 76, member of the Texas Railroad Commission, is serving his last month of a career in public service covering more than a half-century. J. A. SADLER will succeed him January 2. Mr. Terrell, who likes to hunt big game and ride horseback, says he has no thought of retiring. "I don't intend ever to seek office again," he said, "but believe I can make a living practicing law. I think I will enter private practice in Austin, my home for the last 18 years."

Personal Paragraphs

KINK IRVIN, scout for the Shell Petroleum Corporation at Beeville, Tex., is spending a two weeks vacation visiting points of interest along the border and old Mexico.

HOWARD KEGLEY, president; G. A. JOSLIN, vice president, and VICTOR J. HAYEK, secretary-treasurer, were reelected to office by the Mining Association of the Southwest at the annual meeting.

SIDNEY BINION, assistant chief scout for the Shell Petroleum Corporation at Houston, Tex., has returned to his desk from a two weeks vacation which he spent hunting and fishing near his former home at Oakridge, La.

JERRY SCULLY, who is believed to be interested in oil production in Oklahoma, is the object of a search by relatives. His cousin, Timothy Scully, 418-A Fourth Street East, Calgary, Alberta, Canada, is trying to get into touch with him, with a view of conveying information of importance.

BONNEAU PETERS, chief scout with the Standard Oil Company of Louisiana and president of the Shreveport Baseball Club, attended the annual meeting of the National Association of Professional Baseball Leagues in New Orleans last week, and arranged for the purchase of a new manager and several new players for the Sports.

W. H. GEIS, president of the California Oil and Gas Association and recently elected chairman of the petroleum section of the American Institute of Mining and Metallurgical Engineers, has been appointed special representative of the field and exploration department of the Union Oil Company and will maintain offices in Los Angeles.

J. P. CONNELL, of Houston, Tex., has been appointed head of the lubrication sales department of the Arkansas Fuel Oil Company, Shreveport, La., replacing the late R. J. LeLong.

SHIFTS: WAYNE COFFMAN, chemist, Cities Service Oil Company, from Morrison, Okla., to Bartlesville, Okla.; W. M. GALLAGHER, treasurer, Peru Oil & Gas Company, from Litchfield, Ill., to Tulsa; P. H. KOLM, consulting geologist, from Abilene, Tex., to Maryville, Mo.; JUNIUS H. BROWN, JR., Moore Brothers Corporation, from Midland, Tex., to Houston, Tex.; R. RANNE, manager, Dale Refining Company, from San Antonio, Tex., to Overton, Tex.; T. J. WELBORN, vice president, J. M. Welborn Company, from Brownfield, Tex., to Mattoon, Ill.; BRONISLAW GOLDMAN, oil economist, from Havana, Cuba, to New York, N. Y.; B. H. STINEAR, geologist, New Zealand Petroleum Company, Ltd., from New Plymouth, New Zealand, to Christchurch, New Zealand; ELMAR V. PIEL, engineer, Shell Ethol, from Long Beach, Calif., to San Francisco; P. M. BRICKLEY, independent producer, from Greenville, Tex., to Denison, Tex.; C. K. PORTER, engineer, from Centralia, Ill., to Houston, Tex.; J. C. JONES, independent producer, from Centralia, Ill., to McAllen, Tex.; JOHN S. CHICK, engineer, Carter Oil Company, from Mattoon, Ill., to Sandoval, Ill.; H. H. LAWSON, independent producer, from Mattoon, Ill., to Bloomington, Ind.; E. G. HEAD, engineer, Gulf Oil Corporation, from Evansville, Ind., to Terre Haute, Ind.; COTTON & USREY, producers, from Sullivan, Ind., to Mattoon, Ill.; DEAN SHENDAL, independent producer, from Lawrenceville, Ill., to Vincennes, Ind.; ROBERT D. HANNA, vice president, Mexican Seaboard Oil Company, from New York, N. Y., to Miami, Fla.; M. R. BRANN, producer, from Warren, Pa., to Colorado Springs, Colo.

REX L. DAWSON, who was forced to take a leave of absence from his duties as division superintendent of the Carter Oil Company in Mattoon, Ill., because of illness, is receiving treatment at the Veterans Hospital in Sulphur, Okla. He had been in a Springfield, Ill., hospital.

Began at Glenn Pool

S. T. Childress, vice president and general manager of the Rio Bravo Oil Company, Houston, Tex., got his start in the historic Glenn pool of Oklahoma. From that time on he was an oil man, making the climb by way of roustabouting, tool-dressing, and drilling. Mr. Childress was born on a farm near Dallas, in Dallas County, Texas. Soon after he finished school in 1908 a drilling contractor operating in the Glenn pool gave him a job tool-dressing. Two years later the young man went to the Spindletop field in Texas as a roustabout for the Myers Oil Company. In 1912 he was tool-dressing again, this time for the Negreet Oil Company on one of the early rotary tests in Sabine Parish, Louisiana. The hole went to 4,000 feet, a deep one in those days, and it was dry. For the next six years he worked on producing projects in the Gulf Coast and North Louisiana territory. Then came the Orange, Tex., boom in 1922, and Mr. Childress went there as a driller for the Hamilton Oil Company and later for Rycade Oil Company.

S. T. CHILDRESS

In 1926 Mr. Childress moved to the Mirando City, Tex., district as production superintendent for the Associated Oil Company. The next year he was transferred to Houston as drilling superintendent for Rio Bravo, an affiliate, with promotion soon afterward to superintendent of the Gulf Coast division, in charge of drilling operations. In 1935 came advancement to vice president and general manager.

J. W. MURRAY, head of the southern division of Southern California Gas Company, has resigned and has been succeeded by G. W. CARBEE.

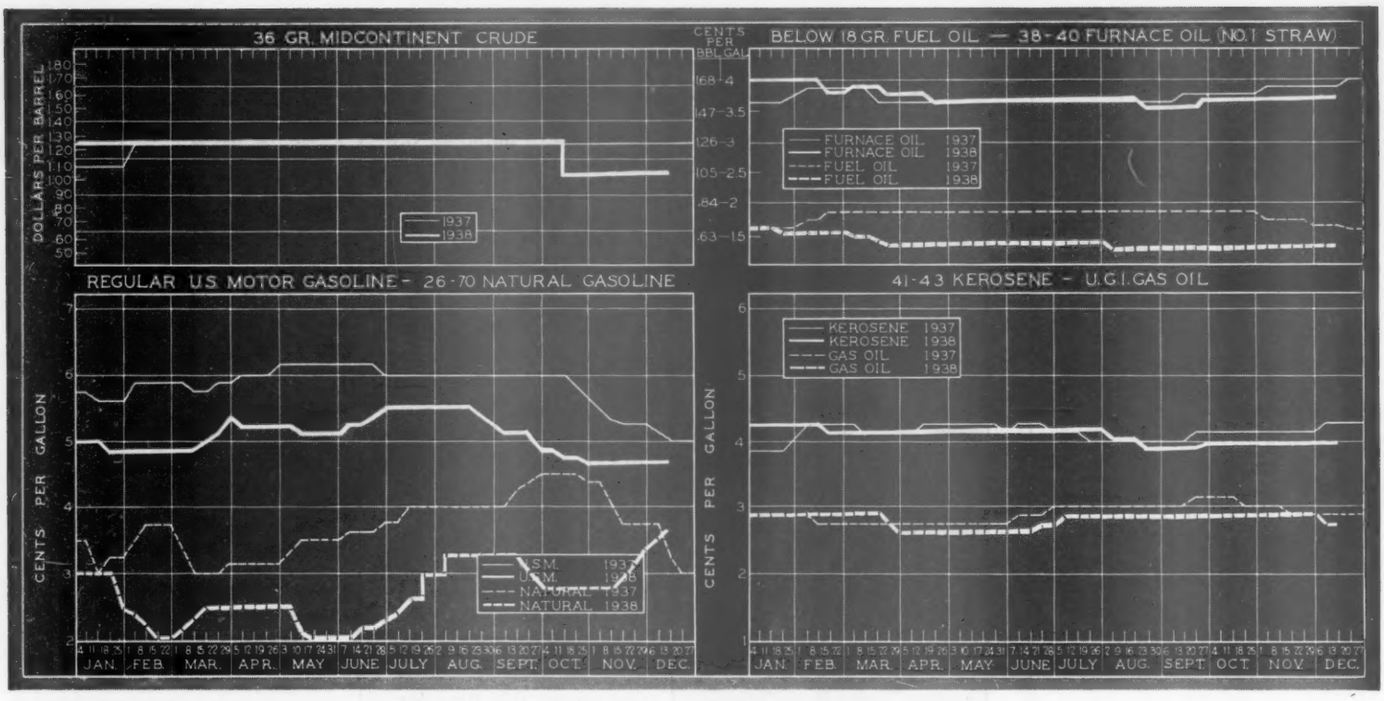
A. W. NASH, professor of Petroleum Technology at the University of Birmingham, has been elected president of the Institute of Petroleum for the session 1939-40.

C. A. BAIRD, assistant chief geologist for Mene Grande Oil Company, Venezuela, has been transferred to the Danish American Oil Company, a Gulf Oil Corporation subsidiary which is engaged in making a geological and geophysical study of Denmark. Mr. Baird sailed from New York en route to Denmark December 6.

JOHN E. FARRELL, independent oil operator of Fort Worth, Tex., accompanied by Mrs. Farrell, will sail December 16 from New York on the Queen Mary to spend Christmas in St. Moritz, Switzerland, with their daughter, Virginia Jane. They will tour Italy, Germany, and other European countries before returning to Fort Worth about March 1 of next year.

GEORGE H. NORTON, Wichita, Kansas division geologist for the Atlantic Refining Company, was elected president of the Kansas Geological Society at its annual dinner meeting in Wichita last week, succeeding ED O. KOESTER, division geologist for the Darby Petroleum Corporation. TOM ALLAN, and E. GAIL CARPENTER, Wichita consulting geologists, were chosen vice president and secretary-treasurer, respectively. R. G. MOSS, Wichita, Kansas division geologist for the Phillips Petroleum Company, and PHIL K. COCHRAN, Kansas division geologist for the Carter Oil Company, were elected directors.

LUTHER WILLIAMS, Mid-Continent Petroleum Corporation, Tulsa, was elected president of the Southwestern Association of Industrial Editors, organized at Stillwater, Okla., December 9 and 10. Other officers chosen: First vice president, ELDON FRYE, Phillips Petroleum Company, Bartlesville, Okla.; second vice president, BENTLEY BARNABAS, Kansas Gas & Electric Company, Wichita, Kans.; secretary and treasurer, MARCELINE MARQUIS, Warren Petroleum Corporation, Tulsa; corresponding secretary, C. E. TROUT, Oklahoma A. & M. College, Stillwater; directors, HARRY TURNER, Topeka, Kans., HARRIETT BIRDSEYE, Oklahoma City, Okla.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Natural Gasoline Goes to New High in Group 3 Area; Motor Fuel Lifeless

By T. F. SMILEY

Natural gasoline wrote the best market story of the week in the Group 3 territory. If the prices of higher-octane motor fuel were a trifle firmer, it was only because the higher cost of the naturals lessened the willingness of refiners to make concessions. The heating oils, still plagued by mild weather in various areas, were having difficulty in maintaining steadiness.

Natural gasoline manufacturers declared they could recall no previous time when their product was tighter—not merely "scarce at current prices," but scarce at any price. Manufacturers themselves were deep in the market, striving to pick up any odd cars. Field stocks were exhausted, and current production was being shipped as fast as it came from the plant. Some purchasers, after futile endeavor to get the particular grade they wanted, took what they could get and said "Thank you." Prices recorded a new high for the year.

Squeezing Orders Into One Month

The bounding market was attributed chiefly to the fact that a peculiar set of circumstances had compressed into one month the business which normally would be spread over two or three. In consequence of unusual driving weather refiners were taking motor fuel out of storage in October and early November this year, in contrast with the procedure in 1937, when steady additions to inventories were the rule. It was almost December before substantial demand for winter-specification fuel developed. In the meantime refiners with storage facilities were drawing largely on supplies of natural gasoline which they had bought during the period of bargain prices last spring. Eventually these stocks were depleted, and almost simultaneously cold weather created necessity for winter-grade motor fuel.

A rush for natural for winter blending set in. Besides this, much of the motor gasoline being moved into the market had been in tanks a long time and needed "pepping up," thus adding to the call for natural. Export buyers who had been postponing orders in the hope of catching prices at their low hurried to make the best bargains they could in a rising market. On top of these conditions was the fact that major companies have adopted the practice of increasing the volatility of their winter fuel.

Low-octane gasoline showed symptoms of softness this week, not only because of the diminished demand which accompanies the advent of cold weather, but because of the increased offerings following Standard of Indiana's introduction of a 67-octane third-grade fuel. All grades lacked life. Consumption was holding up well, notwithstanding less favorable driving conditions. Refiners faced with higher prices for natural gasoline and the necessity of buying more of it to make winter blends, declared they would have to get more for their product.

Plant Shutdowns

The East Texas Refining Co.'s plant at Longview and the Danciger Oil & Refineries Co., Inc., plant at Bodie have been shut down, leaving few East Texas plants operating on federal-tender crude. The Muskogee, Okla., plant of the Pure Oil Co. is to be closed within 60 days "for an indefinite period."

Cold weather which swept northern areas last week enlivened the demand for heating oils a little; not enough to effect any changes in tankcar prices. The sharply rising demand for industrial fuels on the East Coast had an invigorating effect in the Mid-Continent, but prices will have to go higher before interior refiners, under the disadvantage of freight costs, will feel any direct benefit from the better market.

Bright stocks and neutrals offered no hope of better days in the near future. Wax was increasingly strong. Some manufacturers have withdrawn from the market.

Refined Oil Market Barometer

Motor fuel unsettled, largely as a result of introduction of 67-octane third grade. Natural gasoline extremely tight and supplies increasingly scarce. Industrial fuel oil extending its gains, with stocks falling and prices up. Light heating oil and kerosene lack vigor in interior regions, but are stronger on eastern seaboard. Lubricant market continues unsettled.

MID-CONTINENT. Natural gasoline buoyant. Motor fuel unsteady. Light fuels slightly firmer.

EAST COAST. Gasoline slower. Industrial fuel oil stronger. Light burning oils up.

GULF COAST. Gasoline weak. Demand for heavy fuel oil up. Light fuels steady, prices firm.

PENNSYLVANIA. Gasoline soft. Bright stocks holding well. Wax firm.

CALIFORNIA. Bunker fuel and Diesel for bunker lower. Fuel oil soft. Market inactive.

CHICAGO. Low-octane gasoline weak. Mild weather affects heating oils. Kerosene dull.

Industrial Fuel Moving Upward in Markets on the East Coast

By H. STANLEY NORMAN

NEW YORK, Dec. 12.—Strength at the primary Gulf Coast markets and climbing tanker charter rates combined last week to move industrial fuel oil into the strongest position it has occupied in months. Demand is still on the upgrade and the minimum price quoted by northeastern distributors last week for spot business was 2¾ cents per gallon. A large contract covering 3,500,000 gallons of No. 6 fuel oil for consumption in three or four New York hotels was reported closed last week at a price range of 2 3/10 to 2½ cents per gallon. Considering the volume involved in this transaction traders said the price was not truly reflective of the current spot market. Talk was heard in the trade that heavy fuel oil prices are in position to move to three cents.

The Gulf Coast market for Bunker C fuel oil in cargo quantities appears firmly established at 67½ cents per barrel. The lowest tanker charter rate heard last week was 26 cents per barrel for December loading. Most charters, however, were negotiated at prices ranging from 28 to 30 cents and a scarcity of clean boats appeared developing. Boat owners are asking 30 cents, an increase of 12 to 14 cents per barrel over the market of a few weeks ago.

The New York price for Bunker C fuel oil in barges remains unchanged at 95 cents, although most traders are talking higher prices unless the boat charter rate advance is checked or unless Gulf Coast suppliers weaken. Under present conditions, industrial grades of fuel oil delivered to New York terminals are costing almost the equivalent of the selling price to the marine trade and resellers.

Demand from steamship lines has been particularly heavy during the past few weeks. Holiday season trade is partially responsible, but the recently negotiated trade treaty with Great Britain is an even more important factor. Several exporters of both countries deferred their shipments of goods until the trade treaty was finally signed to take advantage of lower duties. The rush to catch up on delayed shipments has exerted considerable influence on the Bunker C fuel oil demand in the past two or three weeks.

Consumption by heavy industry is holding up the revitalized manufacturing program and apartment, office building and store heating requirements are at mid-winter levels in several areas. Latest statistics indicate that the country's stocks of about 118,000,000 bbls. of residual fuel oils are being liquidated at the rate of 750,000 to 1,000,000 bbls. per week. Stocks are still a little more than 15,000,000 bbls. higher than at the same time in 1937, but if consumption by manufacturers suffers no slump economists visualize an escape from the burden by the middle of 1939 or earlier. Despite excessive stocks, some suppliers were reported unwilling to sell at the current market of 67½ cents on the Gulf and were asking a minimum of 70 cents. As soon as, and if, stocks available at the market of 67½ cents are liquidated the entire structure may be expected to increase.

The motor fuel tankcar price structure eased to some extent on the low side of the price range. Some traders reported business could be done in certain directions on 65 octane gasoline at 5¾ cents in barges. A few sellers were also reported willing to move stocks at 5¾ cents in the tankcar trade, but a majority of the trading in New York continued at a range of 6 to 6¼ cents.

Gasoline prices also were reported easier in other eastern seaboard terminals including Boston, Philadelphia and Baltimore. Some sellers at Boston and Providence were offering 65 octane gasoline at 6 to 6¼ cents, which was a quarter of a cent below the range during the preceding week.

The Gulf Coast motor fuel market appears to be in satisfactory condition. Most refiners in that area are quoting 4⅝ cents per gallon on 65 octane motor fuel which is unchanged from recent weeks.

The easier tone in the eastern territory is attributed to at least two developments. One is the lower tank-wagon and tankcar consumer prices posted at the end of November and early this month throughout New England and several New York points by Socony-Vacuum Oil Co., and the other is the reduced consumption caused by colder weather, snow and rain. Light fuel oil has moved forward abreast of residuals both in consumption and in price. The minimum tank-wagon delivery quotation on No. 2 fuel oil in the New York territory now appears to be 6 cents per gallon compared to a low of 5½ cents per gallon existing before the blizzard November 24. The cargo price at Gulf refineries appears reasonably well established at 3⅝ cents for No. 2 fuel while the tankcar market in New York ranges from 4 to 4¼ cents with a majority of the business closed at the higher figure. Demand for domestic heating oils is just now reaching the levels anticipated by refiners and resellers which is easing the storage burden at bulk terminals as well as at refineries.

Kerosene is one of the most active products at present on the eastern seaboard. This demand is a reflection of the heating season in the New England district and in other sections from Washington north where space heaters are concentrated. New York tankcar suppliers are asking 4¾ cents per gallon, the price that has prevailed for several weeks. The present market, however, is practically devoid of tank-wagon price shading that prevailed up until the start of this month. Heavy movement of kerosene during the final weeks of November to inland water-way points which are now closed to traffic materially reduced stocks at eastern seaboard terminals. Position of stocks combines with the current demand to give the kerosene market a bright outlook. Gulf Coast suppliers are quoting from 3¾ to 3⅞ cents per gallon for 41-43 water white kerosene and demand is reasonably active, according to traders in coastwise business.

Retail gasoline prices are still highly unsettled in numerous eastern points and hundreds of small towns are below normal in western New York, southern New Jersey, northern and western Pennsylvania and in other scattered points. Depressed prices at Chambersburg and Lancaster, Pa., have been elevated slightly, about two-tenths of a cent per gallon by most stations, but a break of corresponding intensity was reported in Wilkes-Barre.

Southern New Jersey retail motor fuel prices continue below normal for the eastern territory. Camden's general price of 13.9 cents per gallon for branded gasoline has been unchanged for three or four weeks and some stations were posting corresponding prices at Cape May and at Atlantic City.

In the western Pennsylvania refining district general conditions prevailing the preceding week were unchanged. Some refiners

(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

Week Ending December 10, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	471,000	17,616,000	15,043,000
Appalachian	85.9	102,000	2,751,000	735,000
Indiana, Illinois, and Kentucky	89.5	420,000	10,367,000	8,280,000
Oklahoma, Kansas, and Missouri	81.6	256,000	6,078,000	4,540,000
Inland Texas	50.3	104,000	1,628,000	1,965,000
Texas Gulf	88.9	772,000	9,166,000	13,619,000
Louisiana Gulf	97.3	119,000	2,173,000	2,614,000
North Louisiana and Arkansas	55.0	47,000	418,000	877,000
Rocky Mountains	54.2	48,000	1,182,000	715,000
California	90.0	470,000	13,428,000	99,041,000
Total reported	85.6	2,809,000	64,807,000	147,429,000
Estimated unreported	.....	341,000	3,780,000	3,350,000
*Estimated total	.....	3,150,000	68,587,000	150,779,000
*Estimated total previous week	.....	3,175,000	69,155,000	151,617,000
*December 11, 1937	.....	3,200,000	72,680,000	119,273,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending November 26, 1938	270,563,000 barrels
Week ending November 19, 1938	271,955,000 barrels
Week ending November 27, 1937	304,156,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of December 13, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.0	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	14.3	11.6	4.0	9.0
Grand Rapids	14.8	13.05	4.0	9.7
Saginaw	15.8	14.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†9.5
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. Dak.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	11.9	4.0	7.5
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	11.2	4.0	9.3
Wichita, Kans.	13.9	10.6	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective November 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents, 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 4.75 cents; 400 gallons and over 3.75 cents. Stanolex grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	12.7	10.9	4.0	8.0
Newark	12.7	10.9	4.0	8.0
Annapolis, Md.	14.35	12.85	5.0	9.5
Baltimore	13.75	12.25	5.0	8.5
Cumberland	16.15	13.65	5.0	10.0
Wash'g'n, D. C.	12.0	10.50	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	11.0
Charles'n, W. V.	16.55	14.05	6.0	12.6
Parkersburg	14.85	13.35	6.0	11.2
Wheeling	15.75	14.35	6.0	12.2
Charlotte, N. C.	18.15	15.65	7.0	12.1
Hickory	18.65	16.15	7.0	12.5
Mt. Airy	18.45	15.95	7.0	12.3
Raleigh	17.75	15.25	7.0	11.6
Salisbury	18.25	15.75	7.0	12.2
Charleston, S. C.	16.75	14.25	7.0	10.6
Columbia	17.25	15.25	7.0	11.6
Spartanburg	18.45	15.95	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

While the above prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.4 cents per gallon for Essolene. Dealers having pumps marked only "Esso, Essolene and 'Standard White'" gasoline will pay 7.9 cents for Essolene. Price basis to all other undivided dealers above is Essolene dealer tank-wagon price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	20.5	17.5	7.0	8.5
Augusta	20.0	17.0	7.0	10.0
Macon	20.0	17.0	7.0	11.0
Savannah	19.0	16.0	7.0	9.0
Birm'ham, Ala.	21.0	18.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	18.5	15.5	7.0	9.5
Vicksburg	19.5	16.5	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	20.0	17.0	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	20.0	17.0	8.0	8.0
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	19.0	16.0	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	19.0	6.0	15.5
Helena	20.0	6.0	15.5
Salt Lake City, Utah	16.0	5.0	16.0
Boise, Idaho	19.0	6.0	18.0
Twin Falls	19.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero-tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.0	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline T'wag. dealer	Gasoline T'car consr.	Gasoline Inc. tax	Kero. tank wag.
Albany	13.8	11.75	5.0	8.0
*Met. N. Y.:				
Manhat., Bronx	12.9	11.75	5.0	8.0
Staten Island	12.9	11.75	5.0	8.0
Q'ns & Bklyn.	12.9	11.75	5.0	8.0
Buffalo	12.9	12.6	5.0	7.5
Rochester	14.0	13.2	5.0	8.5
Syracuse	12.5	12.4	5.0	8.5
Boston, Mass.	11.5	10.5	4.0	7.5
Portland, Me.	14.0	11.75	5.0	8.75
Manch'ter, N. H.	14.5	12.3	5.0	8.5
Burlington, Vt.	14.7	12.3	5.0	9.5
Springf'd., Mass.	13.0	11.0	4.0	8.0
Worcester	13.0	11.0	4.0	8.0
Hartford, Conn.	13.0	10.9	4.0	7.0
New Haven	12.3	10.8	4.0	6.0
Providence, R. I.	12.5	10.5	4.0	7.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Phil'delphia, Pa.	13.0	12.0	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	...	5.0	10.5
Wilmington	12.5	...	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.25	16.75	*10.0	†11.0
Baton Rouge	17.25	14.75	8.0	‡10.5
Alexandria	17.25	14.75	8.0	‡12.5
Lafayette	17.50	15.00	8.0	‡12.5
Lake Charles	17.25	14.75	8.0	‡12.5
Shreveport	16.00	13.50	8.0	‡11.0
Knoxville, Tenn.	20.50	18.00	8.0	14.5
Memphis	18.50	16.00	8.0	12.5
Chattanooga	20.00	17.50	8.0	14.0
Nashville	17.50	17.00	8.0	12.0
Bristol	19.00	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	17.5	16.0	6.0	10.3
McCook	17.5	16.0	6.0	10.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.4	6.0	11.0
Scottsbluff	19.0	13.9	6.0	11.8

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	13.5	5.0	7.0
Oklahoma City	12.5	5.0	7.0
Tulsa	12.0	5.0	6.0
Fort Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	9.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	17.0	5.0	8.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	20.0	6.0	14.5
Toronto, Ont.	21.0	6.0	15.5
Hamilton, Ont.	21.0	6.0	15.5
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of New Jersey November 25 reduced dealer tank-wagon gasoline in Columbia .5 cent.

Standard Oil Co. (Ind.) December 1 reduced tank-wagon gasoline .5 cent in Minneapolis; December 7, reduced dealer gasoline 1 cent in Kansas City; December 9, reduced dealer gasoline 1.2 cent in Detroit.

Socony-Vacuum Oil Co., Inc., December 6 reduced tank-wagon dealer gasoline .5 cent in Albany and New Haven.

New York Market

(Continued from Page 111)

were offering 70 octane motor fuel at 6½ cents in tankcars. Some suppliers elevated crude scale wax prices to the high of the range and demand for bright stocks, stimulated late in November by a reduction of 2 cents per gallon and greater industrial activity, was reported holding up particularly well.

New York wax prices are unchanged at 2.35 cents for scale and the demand appears to be sufficient to maintain this level for the present. Export shipments are still lagging behind the 1937 level, but domestic consumers are ordering liberally against contracts.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of December 13, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.03⅝	.03⅞
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04⅜
70-72 octane (regular)	.04½	.04⅝
60-62 400 grades:		
62 oct. and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04½	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04⅜
70-72 octane (regular)	.04½	.04⅝
60-62 400	.03¾	.04
64-66 375	.04	.04¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04	.04⅛
63-66 octane	.04¼	.04½
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04	.04⅛
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane	.04½	.04¾
60-62 400 grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane	.04½	.04¾
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¼	.04¾
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04¼
60-64.9	.04½	.04⅝
65 octane and higher		.04⅝
68-70		.05

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04⅜

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03⅝
Grade 18-55	.04¼	.04⅜

NORTH TEXAS—

Grade 26-70		.03⅜
Grade 18-55	.03⅞	.04

CALIFORNIA—

75-85 375-390	.06¼	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03¾

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 l.b.p., 480 max., e.p.	.04½	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45	.04⅝	.04⅞
46	.04¾	.05
47	.04⅞	.05

CHICAGO (Based on Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04⅜	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02¾	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03⅝	.04¼

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03½
43-47 Deisel		.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)		.65
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04⅛
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
20 pourpoint	.13	.13½
25 pourpoint	.12	.12½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¾	.07⅞
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07½	.08
450-3-4	.07¾	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pourpoint	.17	.17½
10 pourpoint	.16	.16½
15 pourpoint	.15	.15½
25 pourpoint	.14	.14½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.19	.19½
10 pourpoint	.18	.18½
15 pourpoint	.17	.17½
25 pourpoint	.16	.16½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0235	.0250

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0375
125-127 (a.m.p.) wax	.0390
128-130 (a.m.p.) wax	.0400
130-132 (a.m.p.) wax	.0435
133-135 (a.m.p.) wax	.0465
135-137 (a.m.p.) wax	.0490
124-126 (a.m.p.) w.s.	.0230
124-126 (a.m.p.) y.s.	.0230
Petrolatum in barrels, carload lots:	
Dark green	.02 .02⅛
Amber	.02⅜ .02½
Extra amber	.02⅝ .02¾
Lily white	.05⅛ .05¼
Snow white	.06⅛ .06¼
Cream	.04⅛ .04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04⅞
60-62 400	.04⅝	.04⅞
61-63 390	.04½	.04⅝
64-66 375	.04½	.04⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05⅞

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stock:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0235	.0245
124-126 y.s.	.0235	.0245

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Van, Tex. (Oct. 11, 1938)* ..... .93
Talco, Tex. (Oct. 11, 1938)* ..... .55
Rodessa, Tex. .....
See North Louisiana gravity schedule
Cass and Panola counties, Texas .....
See gravity schedule
Aitus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 12) ..... .81
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Tide Water Associated Oil Co. Clay Creek posted by Sun Oil Co.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)* $1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† 1.04
Garden Island, La. (Oct. 12, 1938)‡ 1.24
Lafitte, La. (Oct. 12, 1938)† 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ ... 1.14
Hardin, Tex. (Oct. 12, 1938)¶ 1.02
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ .. 1.03
Abbeville, La. (Oct. 11, 1938)§ ...
See note below
Bosco, La. (Oct. 13, 1938)¶ 1.02
Creole, La. (Oct. 12, 1938)¶ ..... .96
Gueydan, Sweet Lake and Louise, La. (Oct. 13, 1938)¶ ..... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)** .....
Long Lake, Tex. (Oct. 13, 1938)** .. 1.08
Segno and Wing (Oct. 13, 1938)** ..
See note below
Livingston (Oct. 11, 1938)† 1.10
Gibson, La. (Oct. 11, 1938)† 1.04

*Humble Oil & Refining Co. †Shell Petroleum Corp. ‡The Texas Co. §Continental Oil Co. ¶Magnolia Petroleum Co. ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, $1.01, 2-cent spread to 40 degrees and over at $1.11. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* ..... $ .96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ... .99
Mirando (Oct. 12, 1938)† ....
Government Wells (Oct. 13, 1938). ...
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

North Louisiana and Arkansas

Smackover, Ark. (Oct. 5, 1938)* ... $ .78
Buckner, Magnolia and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand ..... See note below
Tullos and Urania ..... .88
El Dorado east field ....
Lisbon, La. (Sept. 19, 1938) .....
See note below

*Smackover posted by Standard Oil Co of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938. Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Lima, Ohio ..... $ .90
Illinois old fields 1.05
Illinois basin 1.15
Princeton, Ind. 1.05
Western Kentucky 1.10
Greendale, Porter and Crystal, Mich. (Oct. 13, 1938)* ..... .92½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Oct. 13, 1938)* ... .90
Freeman, Mich. (Dec. 13, 1938)* .. .82
West Branch and Arenac, Mich. (Dec. 13, 1938)* ..... .70
Muskegon 1.00
Eastern Kentucky:
Big Sandy River (Oct. 1, 1938)† . 1.22
Kentucky River (Oct. 1, 1938)† . 1.30

*Simrall Corp. †Ashland Refining Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)* .. $ .92
Elk Basin, Wyo. (Oct. 11, 1938)*† .. .90
Grass Creek, light, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, heavy (Oct. 11, 1938)† .40
Lance Creek, Wyo. (Oct. 11, 1938)* .77
Rock Creek, Wyo. (Oct. 11, 1938)*. 1.00
Iles, light, Colo. (Oct. 11, 1938)† ... .98
Iles, heavy, Colo. (Oct. 11, 1938)† .. .92
Dutton Creek, Wyo. (Oct. 11, 1938)† ..... See note below
Frannie, light, Wyo. (Oct. 11, 1938)† .55
Frannie, heavy, Wyo. (Oct. 11, 1938)† ..... .42
Hamilton dome, Wyo. (Oct. 11, 1938)† ..... .35
Midway, Wyo. (Oct. 11, 1938)† ... See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)† ..... .646
Salt Creek (Oct. 11, 1938) See note below
Canon City, Colo. (Oct. 11, 1938)‡.. .90
Florence, Colo. (Oct. 11, 1938)‡ ... .90
Cat Creek, Mont. (Oct. 11, 1938)‡.. 1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡ .98
Lance Creek, Wyo. (Oct. 11, 1938)‡ .77
Lea County, N. M. .....
See West Texas gravity schedule‡
Artesia, Jackson and Maljamar .....
See gravity table‡
Fort Collins and Wellington, Colo. .....
See gravity table‡
Eddy County, N. M. (October 11, 1938)¶ ..... .77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ¶Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents. 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep, takes Standard Oil Co. of Indiana Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO
(Effective September 1, 1938)

Bradford, Pa. $1.68
Allegany, N. Y. 1.68

SOUTH PENN OIL CO.
(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field) .. $1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.34
Pennsylvania Grade Oil in Eureka Pipe Line lines 1.38
Pennsylvania Grade Oil in Buckeye Pipe Line lines 1.18
Corning Grade Oil in Buckeye Pipe Line Co. line (Oct. 18, 1938) .... .97

PENNZOIL CO.

Group A $1.61
Group B 1.60
Group C 1.59
Group D 1.58
Group E 1.56

PURE OIL CO.
(Effective September 1, 1938)

West Virginia $1.38

West Texas

See gravity table.
Pecos County (Oct. 11, 1938)* .... $ .78
Pecos shallow (Oct. 11, 1938)† .... .66

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Crude Oil Price Changes

Effective December 13, Simrall Corp. of Mount Pleasant, Mich., announced a 5-cent cut in the price of Freeman crude, making the new price 82 cents per barrel and a reduction of 4 cents per barrel in West Branch and Arenac crude, or to 70 cents per barrel.

Rocky Mountain Runs

Production estimates for week ended December 10:

WYOMING

	Barrels
Salt Creek	15,170
Big Muddy	1,180
Badger basin	180
Black Mountain	130
Byron	4,210
Cody dome	80
Cole Creek	110
Dallas Derby	350
Dewey Dome	10
Dutton Creek	60
Elk basin	560
Frannie	2,090
Garland	1,970
Grass Creek	1,930
G. P. dome	20
Hidden dome	80
Hudson	240
Iron Creek	30
La Barge	860
Lance Creek	13,480
Lost Soldier	1,740
Mahoney	40
Medicine Bow	2,950
Mule Creek	200
Midway	40
Oregon basin	1,800
Osage	760
Quealy dome	690
Rock River	2,200
Spindletop	30
Poison Spider	240
Teapot	20
Warm Springs	140
Wertz	1,490
Total Wyoming	55,080

MONTANA

Border	40
Cat Creek	560
Cut Bank	7,380
Dry Creek	270
Kevin-Sunburst	3,460
Pondera	630
Total Montana	12,340

COLORADO

Florence	240
Fort Collins and Wellington	310
Wilson Creek	270
Iles dome	1,910
Moffat	330
Orchard	30
Rangely	50
Tow Creek	160
Price	520
Total Colorado	3,820

NEW MEXICO

Cooper	4,430
Eaves	820
Eunice	22,730
Hardy	2,630
Hobbs	11,630
Jal	940
Langlie	4,400
Lynch	510
Lynn	810
Mattix	3,070
Monument	23,270
North Lynch	40
Penrose	5,420
Rhoades	160
Skelly	1,800
South Eunice	2,950
Vacuum	5,310
Empire State	50
Artesia-Maljamar	5,970
Getty	300
Hogback	200
Rattlesnake	620
Table Mesa	90
Total New Mexico	98,150
Total Rocky Mountain region	169,390

Crude Prices by Gravities

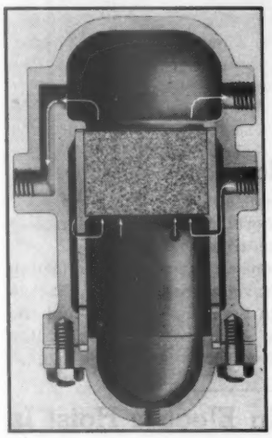
	Oklahoma	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Hutchinson and Carson counties, Texas	Raccoon Bend, Saturna and Tomball, Texas	West Texas and Lea County, N. M.	Fort Collins and Wellington, Colo.	Amhuac and Dickinson, Texas	Refugio, Texas	Mirando and Duval Texas	Gulf Coast Texas	Cass and Panola counties, Texas	Beaumont and West Beaumont, Texas	Lockport, Iowa, Cameron Meadows, Louisiana	Artesia, Jackson and Maljamar, N. M.	Iowa, Louisiana
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Below 18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.74	$.79	....	....	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.74	.79	....	$.79	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.55	....	.77	.82	.77	.82	....	.82	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.57	....	.80	.85	.80	.85	....	.85	.82	....	.83
22-22.9	.66	.74	....	....	....	....	....	$.95	.59	....	.83	.88	.83	.86	....	.88	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.86	.91	....	.91	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.89	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.92	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	.95	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	.97	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	.99	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.01	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.03	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.05	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.07	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.09	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.11	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.13	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.15	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.17	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.19	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.21	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.23	1.28	1.05	1.28	....	.85	....

Effective December 3, 1938, Humble Oil & Refining Co. revised its October price schedules as shown in Columns 3, 6, 7, 8, 11, 12 and 13. The only changes made were the discontinuance of prices on crude of 41, 42, 43, 44 and 45 degrees and over. Humble's new schedule stops at 40 degrees and over. Companies that met Humble's schedule of October 11, have conformed to the revised price schedule, stopping at 40 degrees and over.

New or Improved Equipment

Little Friction Loss Undergone in Fisher Filter for Gases

New filters, designed to meet the increasing demand for a highly efficient filtering device in gas and air lines, have been developed by the Fisher Governor Co., Marshalltown, Iowa. These new Fisher Types 360 and 361 filters remove foreign matter and separate free moisture from the air and gas pipe lines with a minimum friction loss. They protect expensive air tools, machines, and other devices against damage and costly service interruptions, while guarding and improving the quality of the finished product.



Fisher filters utilize extremely hard aluminum oxide crystals bonded together as a filter element. This especially manufactured filter element is both acid- and heat-resisting and unusually strong. Gases pass through it with only slight loss due to friction. The filters may be installed in either vertical or horizontal pipe lines with standard pipe fittings. They are unusually compact. Their advanced design separates free moisture before gases pass through the element. This reduces the load and results in longer service life and less frequent cleaning. Flanged and bolted bottom castings permit easy, quick removal for cleaning.

The filter body is constructed of high-tensile iron, designed to give full capacity. These filters, with screwed connections, are available in sizes one-quarter inch to 1¼ inches inclusive, and with flanged connections from 1½ inches to 2 inches.

Here and There With Men Who Manufacture Equipment

W. A. Tipton, manager of packing sales for the Mechanical Goods Division, United States Rubber Products, Inc., New York, has been appointed a director of the Rubber Division of the Mechanical Packing Association.

John L. Wamsley, oil-country manager for Diamond Chain & Manufacturing Co., Indianapolis, Ind., has purchased a residence at 2238 South Terwilleger Boulevard, Tulsa, and will move from his present one in that city. He will continue to maintain his business offices in his home.

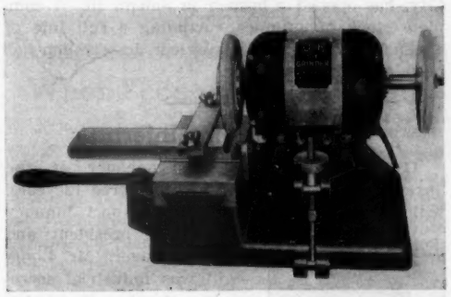
Appointment of Fred Powers as regional sales manager of the southwest zone for Century Electric Co., St. Louis, Mo., is announced. Mr. Powers formerly managed the truck refrigeration division of Century.

W. K. Mellon, vice president, Petroleum Rectifying Co. of California, Los Angeles, is visiting refineries in the Middle West where Petreco Electromantic desalting plants are operating. Before returning to his headquarters he planned to visit the Houston, Tex., branch of his company. With G. B. Hanson, Texas district manager; L. C. Waterman, Texas district engineer, and J. F. Thomas, sales engineer, he attended the A.P.I. convention in Chicago.

Hercules Powder Co., Wilmington, Del., has appointed Tom Brown manager of the contractors' division in the explosives department, succeeding J. J. Kelleher, who resigned. Mr. Brown, connected with the explosives industry since 1911, joined Hercules in 1929.

Die-Grinder for Pipe and Bolt Machines Developed by O-K

O-K Machine & Manufacturing Co., Tulsa, announces its new O-K die-grinder, a precision machine for grinding dies for pipe and bolt machines. It is a sturdy, compact unit with ample power for heavy grinding, driven by a half-horsepower motor at 3,450 r.p.m. The grinder is

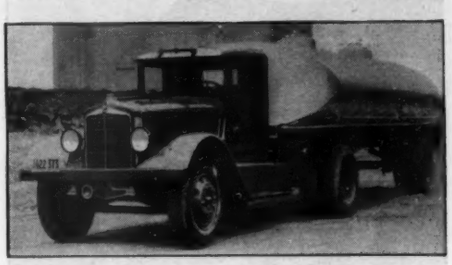


equipped with a 6 by three-quarters inch wheel for die-grinding, also an extra wheel for grinding out broken teeth.

Features of the machine include adjustment screws for taking up wear on all points; adjustable stops for grinder dies (same thickness and same distance back from point), and a special adapter for grinding Landis dies. The device is 30 inches long, 14 inches high and 14 inches wide, weighing only 100 pounds.

Trailer Axle Begins Life Anew After Giving Long Service

The case history of a Timken tubular trailer axle, which "started life all over again" under the trailer shown here, after several hundred thousand miles service under another trailer unit,

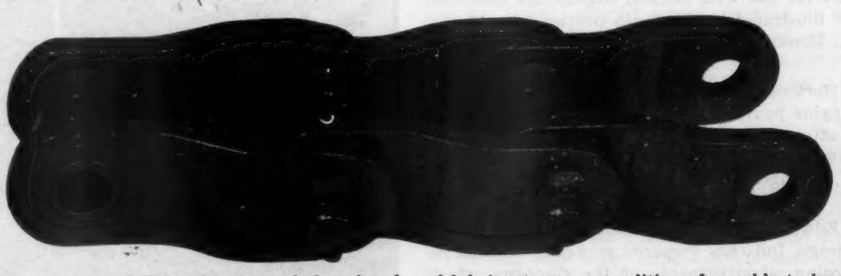


establishes the value of trailer-axle equipment that is properly designed, precision-built and correctly applied, according to Walter F. Rockwell, vice president of the Timken-Detroit Axle Co. This axle (Model T-25000-W) to date has seen over 700,000 miles of service, according to F. J. Decker, president of Diesel Motors, Inc., East Rochester, N. Y., who designed and built the trailer unit for moving a payload of 4,120 gallons of gas or fuel oil. Trailer and tank weigh 10,327 pounds.

Important features of construction account for the axle's long life and economical service, Mr. Rockwell stated. "Exceptional ruggedness and rigidity of Timken tubular trailer axles are obtained," he said, "by use of the tubular beam and Weld-Bilt construction, with every part electrically welded into a complete one-piece unit. The tubular beam is the accepted engineering standard for this type of service, which requires exceptional rigidity and stamina to withstand the bending and twisting forces of load and brake application. The forged steel spindles of this axle are butt-welded to the seamless tubular section of tempered steel by giant electric butt-welding machines. Brake flanges are made an integral part through welding on a gigantic, automatically controlled dual-welder. Spring seats were also electric welded in place, eliminating shifting."

CHAIN RANKS HIGH IN DRILLING REPLACEMENT COSTS

Recent surveys of maintenance expense on rotary drilling outfits are said to indicate that chain ranks third among all items of replacement cost. Since wear is the principal cause, any means of furnishing greater wear resistance in chains is important. Ideal Type G rotary chain, placed on the market by the National Supply Co., is designed especially to provide longer wear in a chain for average depth requirements.



It is lighter in weight and correspondingly lower in price than the deep-well heavy-duty Ideal Type F Spiraloy chain. Nevertheless, parts subject to wear are likewise made from chrome-nickel alloy steel selected and heat-treated for maximum wear resistance. Also the same precise manufacturing methods and efficient utilization of lubricant assure conditions favorable to longer service.

The Ideal Type G chain is made to the established A.P.I. dimensional standards in two sizes: A.P.I. No. 3, 48,000 pounds ultimate strength, and A.P.I. No. 4, 112,000 pounds ultimate strength.

Watchmaker Follows His Craft in Jones & Laughlin Mill

A watchmaker works in a steel plant. Not far from his bench, huge rolling mills turn out tons

of pipe every minute. Yet he follows his craft, learned while making and repairing fine watches. This watchmaker is employed in the Aliquippa works of the Jones & Laughlin Steel Corp., Pittsburgh, Pa., to check and repair precision gauges which have as delicate, fine mechanisms as those in an expensive watch. These gauges are used by inspectors in the tube mills in examining and inspecting the threads of each end of all J & L seamless oil-country pipe and couplings.

The familiar eyepiece, delicate tools and tiny lathe are in strange contrast to the roaring furnaces and thundering rolling mills. Employed first in a watch factory and then in a jeweler's repair shop, G. B. McGarvey, works in a small room in one corner of the vast seamless-tube mills. He still replaces broken hair-springs and worn bearings and makes delicate adjustments, but not to watches. The precision gauges resemble watches in that their works contain jeweled bearings, hair-springs, and other parts similar to those in a valuable watch. Measurements must be accurate to 1/1000 of an inch.

Bulletins, Booklets and Other Literature for the Trade

The distinctive feature of a new catalog brought out by M. B. Skinner Co., South Bend, Ind., is a "leak-loss" chart which shows how much steam, water, oil or air escapes from various size leaks in pipe, under various pressures, with figures showing what these leaks cost.

Marley standardized portable water-cooling units for use with oil-field engines are described and illustrated in a bulletin prepared by Marley Co., Kansas City, Kans.

Hortonspheroids and tanks equipped with Wiggins pontoon roofs in overseas service make an attractive page in the November issue of the Water Tower, published by Chicago Bridge & Iron Co., Chicago.

Edward Valve & Manufacturing Co., Inc., East Chicago, Ind., has prepared an 8-page bulletin reprinting advertisements of the company which emphasize the quality of materials which go into the production of Edward valves.

A ribbon of paper 11,000,000 feet long and 5 feet wide has begun whirring through the presses to form 82,000 copies of the new 1939-40 general catalog listing some 100,000 styles and sizes of products of the Westinghouse Electric & Manufacturing Co.

The Buda Co., Harvey, Ill., has prepared an 8-page illustrated bulletin describing the Buda-Hubron earth-drill, for drilling holes up to 42 inches in diameter, or to 50 feet in depth.

An illustrated 20-page booklet obtainable from the Lincoln Electric Co., Cleveland, Ohio, gives the story of the new arc-welding technique made available by the Lincoln "Shield-Arc" welder with self-indicating dual continuous control. It discusses in detail the operation of welder control, interpreting the electrical performance in terms of mechanical welding results.

"Diesel Power at a Touch of the Button" is the title of a 14-page two-color catalog ready for distribution by the Cleveland Tractor Co., Cleveland, Ohio.

An illustrated bulletin explaining the advantages of the new nickel-molybdenum alloy used in the Taylor heat-treated alloy-steel sling chain has been prepared for distribution by Joseph T. Ryerson & Son, Inc., with offices in principal cities.

Green Head Branch in Salem

The Green Head Bit & Supply Co. of Oklahoma City, has opened a branch in Salem, Ill. A complete stock of supplies, including a full line of Green Head bits, will be carried. Joe Cannon has been appointed manager.

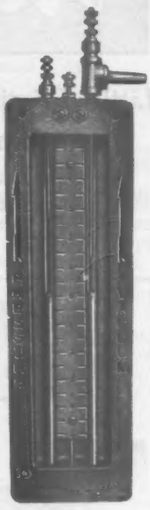
Longwill Joins Inferno

C. W. Longwill, secretary-manager of the Shreveport, La., Chamber of Commerce 12 years, will join the Inferno Co. at Shreveport January 1 as vice president and sales manager. Mr. Longwill was industrial secretary of the Knoxville, (Tenn.) Chamber of Commerce before going to Shreveport in 1926. He is widely known in Gulf Coast and Mid-Continent oil fields.

Inferno, which manufactures steam power equipment such as feedwater controls, fuel cut-off valves, low-water alarms, automatic firing controls, oil and gas burners, gauge cocks, reflex water gauges and safety valves, will introduce soon new and improved products which the management expects will necessitate increased manufacturing facilities and a larger personnel.

Manometer for Oil Tankers Is Announced by Shand & Jurs

The marine manometer, announced by Shand & Jurs Co., Berkeley, Calif., is a vacuum and pressure gauge designed for installation in the engine room or chief engineer's quarters aboard an oil tanker to indicate the pressure or vacuum conditions in the main inert or flue gas line. Adjustable rod contacts project into mercury tubes, which make an electrical contact for sounding an alarm or operating any electrical signaling device when the pressure or vacuum conditions exceed predetermined limits.



Small Back Home

O. D. Small, special sales representative for Portable Rig Co., Inc., has returned to Houston, Tex., from a 10-month tour of South American fields. Traveling via Miami, Fla., to Trinidad, thence into eastern Venezuela and the Maracaibo Basin, Mr. Small covered most of the trip of nearly 30,000 miles by air.

Brake Heat in Electric Hoist Is Diminished by Air-Cooling

One of the problems encountered in electric hoist operation, excessive brake heat, is said to have been overcome in the Yale Cable King wire rope hoist announced by Yale & Towne Manufacturing Co., Philadelphia division. After extensive experiment and research, a Sirocco blower action was applied in the design of the Cable King, producing an effective degree of low-pressure air circulation and cooling on the brake frictional parts, eliminating excess brake heat.

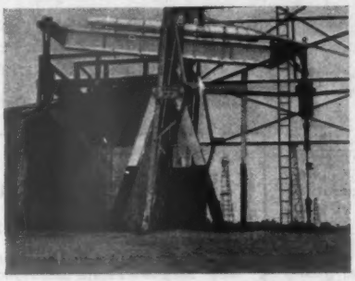
Fins, simulating a Sirocco blower, are cast in the brake-drum in the line of the air stream. As the load is lowered, the fins revolve, producing an air circulation and cooling action that force a constant flow of cool air around the brake and gear housing. To provide free circulation of air, vents are provided in the bottom of the housing.

In laboratory tests, capacity loads were lifted and lowered thousands of times, the equivalent of many years' service, to check the effectiveness of this principle of brake cooling. Results are said to have shown that air-cooling, as applied in the design of the Cable King provides a hoist that will perform on a much heavier duty cycle.

New plant and office buildings of Gearench Manufacturing Co., Houston, Tex.

Sullivan Alleviator Cuts Loss on Rod Breaks and Pulling

Sullivan Machinery Co., Michigan City, Ind., announces the Sullivan Alleviator, designed for use on beam units operating pumping wells. It reduces maximum rod loads and thereby reduces



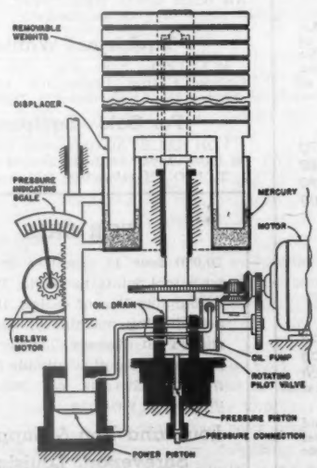
rod breakage and subsequent pulling and replacement expense. Its use also reduces required polished-rod horsepower approximately 20 per cent, which results in less belt and engine trouble.

The unit consists of a cylinder and piston mounted in the rod string between the beam and the polished rod. The piston-rod is attached to the polished rod by a polished-rod grip and the cylinder is attached to the beam. A cushion of air or gas at constant pressure is maintained under the piston to support a uniform upward working load, which results in cutting off peak loads.

On one well installation at Seminole, Okla., where a new rod string invariably failed in less than 40 days and averaged 48 parts per year, a Sullivan Alleviator was installed and since its installation over 175 days of operation are credited to this rod string with only two pin breaks to date. There is a possibility that these were caused by unscrews. On another well, before installing the Alleviator, the rods parted every 8 to 10 hours. Since installing the Alleviator the well has been operated six days to date with no rod parts, though the old original string of rods was left in the well.

Gauge for Extreme Pressures Developed by Bailey Meter

A power-type gauge suitable for measuring extremely high pressures and said to be accurate to one-tenth of 1 per cent of the reading, has been developed by Bailey Meter Co., Cleveland, Ohio. This gauge, shown diagrammatically in the illustration, provides accurate pressure readings on



an indicating scale and may transmit these readings to indicators and recorders at a distance.

The pressure to be measured is applied to a small pressure-piston, which supports a pilot-valve and a table loaded with removable weights. This portion of the pressure device, which is continuously rotated to eliminate static friction, is similar in principle to a dead-weight pressure-gauge, as the applied pressure is counterbalanced by the weight of the table and removable weights, less the buoyancy of the mercury on the skirt of the weight-table. A small motor rotates the pressure-piston and pilot-valve. It also drives a small oil-pump, which provides hydraulic pressure for operation of the power-piston. This in turn moves the mercury-cup, the indicating pointer and the Selsyn motor for electrical transmission of readings. When the applied pressure increases or decreases, the pressure-piston, pilot-valve, and weight-table rise or fall and permit oil under pressure to pass through the pilot-valve to the upper or lower side of the power-piston. If the pressure being measured increases, the pressure-piston is forced upward, carrying the oil pilot-valve with it. As soon as the oil-ports leading to the power-piston are partly uncovered oil is supplied above the piston and is drained from the lower side. The power-piston thus moves downward, lowering the mercury-chamber and tending to withdraw the skirt of the weight-table from the mercury bath. This action results in a loss of buoyant force, which causes the pressure-piston to carry additional weight so that it is forced downward and the pilot-valve is returned to neutral.

In this manner, for each pressure applied to the small rotating pressure-piston, a definite position of the power-piston, mercury-cup and indicating pointer is obtained.

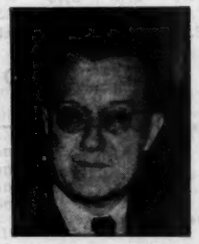
Compressor Designed for Use When Economy Is Important

A heavy-duty Diesel-engine-driven compressor, the XVO, has been announced by the Ingersoll-Rand Co., 11 Broadway, New York. This machine is designed for use wherever economy is a primary consideration, in independent or isolated compressor plants, or when existing power facilities are overloaded. It is recommended for use in construction and contracting, drill barges, air-lift pumping and general industrial service.

The XVO combines a horizontal heavy-duty double-acting compressor with a heavy-duty V-type four-cycle Diesel engine in a single compact and comparatively light-weight unit which operates at moderate speed. Sizes are available for actual free air delivery ratings of 625, 935, and 1,250 c.f.m. for 100-pound sea-level compression. In addition, a wide variety of air-, gas-, and ammonia-compressing cylinders is available for pressures ranging from vacuum to 5,000 pounds.

N. A. Newton Retires

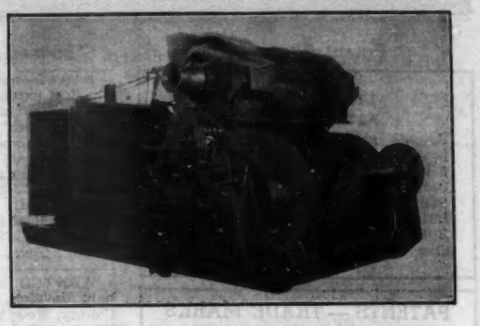
Fellow employes and members of the board of directors presented N. A. Newton, western regional sales manager for the National Transit Pump & Machine Co., with an engraved watch when he retired recently after 40 years of service with the company. L. B. Downs, manager of the Tulsa office, succeeds Mr. Newton. Mr. Downs is succeeded by W. J. Geary, formerly in the sales department of the Tulsa office.



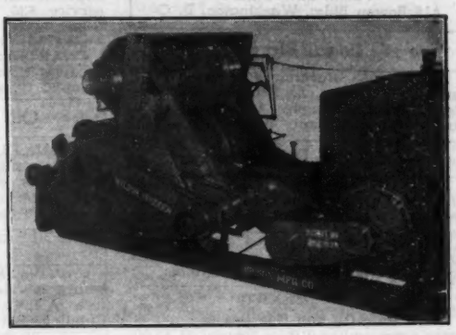
Mr. Newton, formerly with the Standard Oil Co. of Kentucky, began work with the National Transit Pump & Machine Co. as a draftsman in 1898, and in 1912 was transferred to the sales department. As a draftsman he replaced Howell C. Cooper, now president of Hope Natural Gas Co., Pittsburgh, Pa., who had enlisted for service in the Spanish-American War.

Titan Model Spudder Winch Is Big and Powerful Machine

What is believed to be the largest and most powerful spudder winch ever built was completed recently by the Wilson Manufacturing Co., Inc.,



Wichita Falls, Tex. The two illustrations shown here are of the Wilson Titan Model spudder winch, which has a spooling capacity of 32,200 feet of one-half inch line, or 10,500 feet of seven-eighths inch line. This unit is recommended for cleaning out wells up to 10,000 feet, and it will



pull tubing, etc., on wells up to 15,000 feet. It is equipped with circulating-type water-cooled brakes, 54 inches in diameter and 10 inches wide on the main drum. Air-cooled brakes are installed on the main drum.

The lower illustration shows the spudder crank and drive and the chain transmission. The Wilson Titan Model spudder winch is equipped with a 200-horsepower engine, and the transmission has a capacity sufficient to transmit power from engines up to 250 horsepower.

Seam Testing Service Adapted for Finding Leaks in Tanks

A newly developed, accurate seam-testing service has been inaugurated by the American Pipe & Steel Corp., 230 South Date Street, Alhambra, Calif. It is a vacuum method, which can be adapted for locating leaks in the bottoms and decks of tanks, ship decks and hulls, and pipe lines. It is said to involve a minimum of time and expense. The patented device used is an air-tight, rectangular-shaped box, equipped with a vacuum gauge. The top of the box is covered with glass, and soft rubber strips are mounted around the base.

When tests are to be made a section of the seam is covered with a thick solution of soapsuds. The device is placed over the covered area and a strong vacuum is created by means of a suction pump. The tremendous suction compresses the soft rubber base of the device so that air is sealed out. Any imperfections in the seam within the area covered by the tester permit the inflow of air, which in turn causes large clusters of soap-bubbles to appear at that particular point. Detected through the glass top of the seam tester, these bubbles instantly indicate the presence of a leak, no matter how small.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER
Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

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Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees—FREE
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg., Washington, D. C.

Legal Blanks

SINCE 1908 Burkhart's legal forms—serving Mid-Cont. & Illinois oil fields. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

NEW MEXICO
State Oil and Gas Leases
Forty acres and multiples thereof at $6.00 to $30.00 per forty in the Hot Spots. Write for list. Twenty years in the business and not a complaint.
HARRY S. WRIGHT
New Mexico State Lessee, P. O. Box 347, Santa Fe, N. M., or P. O. Box 166, Council Bluffs, Iowa.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

NEW 10-year 40-acre Oil Lease Lea County, joining Gulf Oil Corp., apprx. 1½ miles east of production in Eunice Oil Pool, only $10.00 acre. Roy G. Barton, Hobbs, New Mexico.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

WILL purchase shallow producing lease in Eastern Kansas. D. R. Moser, 323 Security Trust Bldg., Indianapolis, Indiana.

IT'S NO EXAGGERATION TO SAY That your idle funds can earn 300% or more per annum in natural Gas. It's being done here. You can own a lease and producing well for less than $1000. An income for years. I furnish the lease and drill your well in gas proven areas. Write
BUDDENBORG
Osawatomie, Kans.

320 ACRES, Crane Co., Tex., Magnolia lease, cheap in fee. Address 415 Littlefield Building, Austin, Texas.

HAVE BLOCK OF 4000 ACRES
Oil and gas leases in Stark and Jasper counties, Indiana, in an old shallow oil field that has been deserted for 22 years where wells produced oil at 110 to 130 ft. Will turn block over to anyone that will drill 1500 ft. to 2000 ft. to find second pay sand. Act quick—address
C. D. McLEES
528 Porter Street
GARY,
INDIANA.

LEASES—ROYALTIES near Ordovician and Woodbine-Trinity sand wildcats. Quick plays for 50 to 1 chances. E. CROFT, PROCTOR, TEXAS.

3,000 ACRES Leases and Royalties Illinois Basin—20 Acres up. ELTON, BECK. Herrick, Illinois.

Leases and Drilling Blocks

PARTY now conducting special geophysical exploration surveys for oil promise is often in contact with drilling block opportunities, leases, production, royalties and sometimes capital for development where favorable conditions exist. P. O. Box 364, Fort Worth, Texas.

NEAR Pure Noble Deep Test 180 A. Sec. 8, 17 3s R1E Carter Co., Okla. 5 yr. lease. Act. Quick. $25 A. Clarence T. Cox, Big Spring, Texas.

WANTED associates with finances to help develop for oil 80 acres San Juan County, New Mexico. Production close by. W. G. Hokett, 2322 N. 9th St., Phoenix, Arizona.

WILL SELL eighth interest in lease, proven shallow oil field for $130 to finance well. Box 262, Claremore, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

DOLLAR bulletin Free. Important financial information that should be in hands of every Oilman. Request Bulletin OG. John Morris, 1040 S. Paxton, Philadelphia, Pa.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

If we do not maintain a classification exactly suited to the type of advertisement you wish to run, we shall be glad to create a fitting one.
Classified Department

Situations Wanted

EXECUTIVE
Available after January first thoroughly familiar with accounting, financing, drilling and production. Address
Box J-771
The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION SUPT. Age 44—18 years with two major companies in Mid-Continent fields. I can reduce your operating expense and can take full charge of your production and development. Employed at present and can give the best of references including present employer. Address Box J-781, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

WANTED: Reliable and experienced Gas Lift Sales Engineer. Give complete personal record with references. Address Box J-611, The Oil and Gas Journal, Tulsa, Oklahoma.

WE BUY names royalty owners receiving pipe line checks, also stockholders. Box 2603, Tulsa, Oklahoma.

Survey Service

OIL FINDING DOWSING METHOD
My deductions a practical method which picks up vibratory reactions emanating from carbo-hydrates. Physico method finds oil, locates faults. Same method discovered great East Texas field also our Watson #2 first producer Wilmington, Calif. field. Employ a man that owns producing wells. I find oil if it exists or no charge. George Miller, 1548 Post, Torrance, California.

For Sale—Maps

TWO NEW MAPS
(1) Forest City Basin Map. (2) Structural Geological Map of Western Kentucky.
Write for folder giving complete description and prices.
E. C. JACOBSON
801 McBirney Bldg. Tulsa, Okla.

NEW—FIRST EDITION
OIL & GAS FIELD MAP OF NEW MEXICO
Shows Townships, Ranges, Counties, County seat with elevation and all Oil & Gas Fields to Jan. 1, 1939, in color. Size 30"x 30". Orders placed now will be mailed first week January.
Price $1.00 Postpaid.
ZINGERY OIL MAP COMPANY
Fair Bldg. Fort Worth, Tex.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

R. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only.
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

FOR SALE
Oil and Gas Royalty in the Illinois Basin of West Kentucky.
One-eighth of all oil and gas under 8,000 acres, or more than 12 square miles either as a whole or in part. Located in Hancock County, Kentucky, between Indian Creek and Hawesville faults with eight producing oil and gas formations known to exist. Five of which are producing on four sides of this property. Gas now being produced and marketed from shallow sands. A series of deep wells to be drilled on this property with two drilling outfits now on same and ready to start operations. A gas field producing for more than 40 years from formations 400 feet below the McClosky formation is located 3½ miles east of this property.
For information address royalty owner,
BOX 230, OWENSBORO, KENTUCKY
PHONE 145.
All deals direct with owner, no brokers or exchanges.

Equipment Wanted

WANTED: 2000—9⅝" OD Field Edge Colona Casing Protectors. I.T.I.O. Purchasing Dept., Bartlesville, Oklahoma.

For Sale—Equipment

FOR SALE: At Oklahoma City 10 United Iron Works conical exhaust pots cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE
20,000 feet 4" seamless drill pipe with tool joints to single. We have a complete line of casing, line pipe and drilling machinery. Also have racked in Kansas 25,000 feet 8" plain end line pipe suitable for high pressure gas or oil line. Wire, phone, or write to
Louisiana Iron & Supply Co.
Shreveport, Louisiana

FOR SALE—1 Model KS-6-DHK Cardwell Oilwell servicing winch unit, mounted on Mack Truck. Can be inspected O.C. garage. Operating condition now. I.T.I.O., Bartlesville, Oklahoma.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

For Sale—Equipment **For Sale—Equipment** **For Sale—Equipment**

PIPE—STEEL STORAGE TANKS—REFINERY EQUIPMENT

75,000 ft.—2½" line pipe-T&C—5.75 lbs. 30,000 ft.—6" line pipe-T&C—24 lbs.
100,000 ft.—4" line pipe-T&C—10.79 lbs. 100,000 ft.—6" line pipe-T&C—19 lbs.
150—80,000-bbl. tanks—quoted—"As is and where is," cut down and loaded on car; or reerected on customers' grade any location

COMPLETE STOCK OF REFINERY EQUIPMENT — SEND US YOUR INQUIRIES

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba,
Riverview at Second, Kansas City, Kansas

Robt. W. Duden,
2100 S. Union, Tulsa, Oklahoma

FOR SALE: At our Oklahoma City Warehouse Model D48 Muskogee Iron Works long line well servicing unit powered by HXE Hercules engines mounted on No. 55 truck. I.T.I.O., Bartlesville, Oklahoma.

FOR quick sale, a bargain in two Lufkin 6¼" pumping units complete. Also other oil field equipment. P. C. Wade, P O. Box 1986, Houston, Texas. Telephone Hadley 6544.

FOR SALE

Over 75,000 feet 10¾" OD Line Pipe. Cleaned. Stacked Walton, Indiana. Priced for quick sale.

STANDARD OIL FIELD SUPPLY CO.
P. O. Box 863 Houston, Texas

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

FOR SALE — MAGNETOMETER—Like new—Cost nearly $1,000.00, will sacrifice for $250.00 Cash or terms to responsible parties. B. H. Hilburn, Gulf States Building, Dallas, Texas.

FOR Sale: At Oklahoma City 1—"35" Allis-Chalmers Monarch Crawler Type Tractor with or without power take-off for belt drive. I. T. I. O., Bartlesville. Oklahoma.

FOREIGN MARKETS

OFFER AN IMMEDIATE OUTLET FOR

USED OIL EQUIPMENT

Don't fail to let us list your used equipment in the Classified columns of our Annual World Issue, which is to be published December 29.

Not only does this issue offer a world-wide market for your used equipment, but it will be of immediate and lasting reference value to the some 2,200 key men in the oil industry in foreign fields who are to receive copies.

The Oil and Gas Journal

Classified Department

For Sale—Equipment

FOR SALE at Oklahoma City: 9⅝-in. O.D. 8-thread 40-lb. second-hand A.P.I. C seamless steel casing, range 2. I. T. I. O. Co., Bartlesville, Okla.

DISMANTLING GASOLINE PLANT

5 7'x30' Steel Storage Tanks
1 8'x30' Steel Storage Tank
8 85 HP Bessemer Twin Cylinder Gas Engines
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And other Equipment.

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FOR SALE. Several sets reconditioned type 29 rams for 9⅝" OD Shaffer control gate. I. T. I. O., Bartlesville, Oklahoma.

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Any part of 50 clean 8000 gallon noncoiled tank cars, built new in 1926. Cast steel truck sides. Excellent construction and condition. Address Box J-780, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE: Oklahoma City — Approximately 2000' of new 3½" OD 13.3# seamless steel drill pipe less couplings and new Byron Jackson Hopkins anti-friction API non-full hole tool joints. I. T. I. O., Bartlesville, Oklahoma.

ONE Power Driven Rig Complete: Consisting of 1—Wilson Giant Draw Works w/ 1—7¼ x 10" Type FXK Gardner-Denver Power Pump w/ Air Chamber, Powered by 2— Type PA 100 HP International Motors, 2750' of 4½" OD Acme Full Hole Drill Pipe w/ Tools, Practically New. The Globe Supply Company, Box 761, Shreveport, Louisiana.

FOR sale cheap: At Oklahoma City approximately 1300 8" standard Line pipe couplings with dutchmen. I. T. I. O., Bartlesville, Oklahoma.

DERRICKS FOR SALE

72-foot LEE C. MOORE Tubular derricks. Sooner Pipe & Iron Co., 15 E. Cameron, Tulsa, Okla. Phone 2-8492.

N. Y.-Penna. Gas Fields

(Continued from Page 92)

G. L. Cabot, Inc., on the Elmer Downey farm in West Union Township, Steuben County. This test was reported drilling at 5,299 feet after topping the Onondaga at 5,288 feet.

Cunningham Natural Gas Co., on the Fortner farm in Willing Township, Allegany County. The Onondaga was reached at 4,905 feet and operations were shut down at 4,920 feet to run casing.

Empire Producing Co., on the Dan Clark No. 2, Willing Township, Allegany County. Casing is being run in this well which was drilled to 4,848 feet before shutting down. The top of the Onondaga was at 4,818 feet, 38 feet lower than in the No. 1.

Belmont Quadrangle Drilling Co., on the E. A. Treat farm, Erin Township, Chemung County. This test has been cased to 3,360 feet and was prepared to drill in. The top of the Onondaga was at 3,345 feet.

Six wells in addition to the trio nearing completion are drilling in Steuben County. In Woodhull Township, G. L. Cabot, Inc., is drilling at 3,925 feet on the Charles Crane No. 2 after passing the Tully at 3,329-84 feet and is drilling at 485 feet on the George Hotaling farm and Clancey is drilling at 1,610 feet on the School District No. 5 property. New York State Natural Gas Co. is drilling at 1,048 feet on the F. Boyd farm in Cameron Township, and at 4,705 feet on the Sarah Hammond farm, where the Tully was found at 4,278-4,330 feet, in Troupsburg Township, and Van Gelder and others have a fishing job at 2,791 feet on the Fred Farnham farm, Addison Township.

With two wells due for completion in the near future, drilling in Allegany County will be limited to five current wells, two in Willing, two in Alma and one in Independence townships. In Willing Township Empire Producing Co. is drilling at 2,095 feet on the Floyd Wilson No. 2 and Cunningham Natural Gas Co. is rigging up on the William Shear No. 2. In Alma Township, G. L. Cabot, Inc., is drilling at 4,730 feet on the Empire-Rogers farm and has staked a location on the C. W. Vossler farm. In Independence Township, Belmont Quadrangle Drilling Co. is drilling at 4,285 feet on the Elwin Livermore farm after passing the Tully at 4,095-4,145 feet.

A single Pennsylvania operation, one of ten, is due for completion in the near future also. This is the Sylvania Corp. test on the Roy Harrison farm in Bingham Township, Potter County, which is running casing. This well has been drilled to 5,137 feet. It found the top of the Onondaga at 5,122 feet.

Six other operations are also under way in Potter County. G. L. Cabot, Inc., is drilling at 4,760 feet on the Mary Lebar farm and Updegraff and others, at 2,675 feet on the Fred Whitney lot, both in Bingham Township. Belmont Quadrangle Drilling Co. is drilling at 4,665 feet on the R. M. Wolcott farm in Sharon Township after passing the Tully at 4,145-93 feet. New York State Natural Gas Co. is drilling at 3,044 feet on the Bennie E. Truax farm in Harrison Township, Evjen, Harris and others are ready to spud in on the A. R. Mitchell farm in Sweden Township and G. L. Cabot, Inc., has an idle location on the William Cobb farm in Allegany Township.

Other Pennsylvania operations are widely scattered. Two are in McKean County where New Penn-McKean is drilling at 169 feet on the Glenn Taylor farm in Ceres Township and Penn Brad Oil Co. is drilling at 340 feet on Wt. 5574 in Hamilton Township. These tests are in the eastern and western extremities of the county respectively.

The interesting deep test in Venango County is drilling at 4,991 feet. This is the McKenry and others wildcat on the Stellman farm in Rockland Township, first deep sand test drilling in that area.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Gray County

Kewanee Oil & Gas Co. No. 10 McKinney, 3,144-70 feet, 660 bbls.

Hutchinson County

Magnolia Petroleum Co. No. 9 Southwest O. & D., 3,145-54 feet, 20 bbls. Skelly and Cabot No. 6 Herring, 3,066-3,130 feet, 368 bbls. Stanolind Oil & Gas Co. No. 13 Terry, 2,950-84 feet, 108 bbls. Stekoil Oil Co. No. 6 Whittenburg C, 2,895-2,950 feet, 450 bbls. Pennowa Oil & Gas Co. No. 2 Perkins, 3,045-84 feet, 681 bbls.

Moore County

Panhandle Eastern No. 1025 Sneed, 2,401-2,625 feet, 29,807,000 feet gas. Texoma Natural Gas Co. No. 11-M Coon, 2,687-3,093 feet, 6,772,000 feet gas; No. 5-M Coon, 2,480-2,640 feet, 57,907,000 feet gas.

Wheeler County

T. G. Williams No. 2 Bentley, 2,273-79 feet, 20 bbls.

Picton Shallow Gas

In Eastern Ontario, the May Gold and Natural Gas Syndicate has been carrying on a shallow drilling program in Prince Edward County, near Picton. Six wells have been finished at depths from 500 to 525 feet, producing small quantities of gas. The syndicate has secured a franchise to supply individual customers in Picton, extending its service as more gas is located.

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